



CLATRONIC®

SERVICE MANUAL

STEREO - FARBFERNSEHGERÄT
COLOUR TELEVISION



CTV 287 VT

CTV 289 VT / P.I.P.

CTV 290 VT / P.I.P.

CTV 317

CTV 323

CTV 324

CTV 325

CHASSIS F-11 R4 + R5

CTC CLATRONIC®

INTERNATIONAL GmbH

Industriering Ost 40
47906 Kempen

Telefon-Zentr. : 02152/2006-0

Telefon-TKD : 02152/2006-22

Fax : 02152/2006-60

Technische Information

Datum: 17.10.1995

Modell: CTV 287/289/290/317/323/324/325 (Chassis F.11)

lfd. Nr.: 25

Da die Geräte im Laufe der Zeit weiterentwickelt wurden, gibt es zu den einzelnen Gerätetypen verschiedene Schaltbilder, die den Geräten in Originalverpackung beiliegen.

Gerätetyp	mögliche Schaltbild Nr.
CTV 287	88.65.50.36.500 / 88.65.50.36.800 / 88.65.50.38.100-MAG95 / 88.65.50.372.00
CTV 289 P.I.P	88.65.50.36.800 / 88.65.50.372.00(Stereo-Modul aus ...36.800)
CTV 290 P.I.P	88.65.50.36.800 / 88.65.50.372.00(Stereo-Modul aus ...36.800)
CTV 317	88.65.50.36.800 / 88.65.50.372.00
CTV 323	88.65.50.372.00
CTV 324 / 16:9	88.65.50.372.00 + 16:9 Zusatz
CTV 325 / 16:9	88.65.50.372.00 + 16:9 Zusatz

Schaltbild Nr. 88.65.50.36.500

Schaltbild Nr. 88.65.50.36.800

Schaltbild Nr. 88.65.50.38.100-MAG95

Schaltbild Nr. 88.65.50.372.00

Schaltbild Nr. 88.65.5036900

Schaltbild Nr. 88.65.5038200

F11R4 für Geräte mit manueller CUT-OFF-Einstellung

F11R4 für Geräte mit AUTO-CUT-OFF

F11R4 wird nicht benötigt

F11R5 für Geräte mit PCF84C841/169(..210) Prozessor

P.I.P. - Zusatz

16:9 - Zusatz

Mit freundlichen Grüßen

Ihr CTC-Clatronic-Kundendienst

CTC CLATRONIC®

INTERNATIONAL GmbH

Industriering Ost 40
47906 Kempen

Telefon-Zentr. : 02152/2006-0
Telefon-TKD : 02152/2006-22
Fax : 02152/2006-60

Technische Information

Datum: 03.04.1995

Modell: CTV 287/289/290 (Chassis F.11)

lfd. Nr.: 19

Videotextempfang über Scartbuchsen

Einbauanleitung für Nachrüstsatz

R 102 (330R von Basis Tr 28 gegen Masse) entfernen

J 133 entfernen

von Punkt J 133-J 137 Brücke zur Basis Tr 13 legen

J 132 durch Widerstand 68R ersetzen

R 86 entfernen und hierfür Platine einsetzen (P3 - P4 anstelle R 86, X1 - X2 an PIP-Anschluß H7-H6)

X3 an 68R (J 132)

X4 an +12V (R 332)

Bei Geräten mit P.I.P. muß die 2-polige Stiftleiste (die an H7-H6 kommt) der Nachrüstplatine entfernt und durch 2 Kabel an X1 + X2 ersetzt werden. Diese sind dann entsprechend anzuschließen.

Mit freundlichen Grüßen

Ihr CTC-Clatronic-Kundendienst

Anlage: Schaltungsauszug

CTC CLATRONIC®

INTERNATIONAL GmbH

Industriering Ost 40
47906 Kempen

Telefon-Zentr. : 02152/2006-0
Telefon-TKD : 02152/2006-22
Fax : 02152/2006-60

Technische Information

Datum: 25.07.1995

Modell: CTV 287/289/290 (Chassis F.11)

Ifd. Nr.: 18A

Chassis F11

Im Chassis F11 wurden als IC9 verschiedene IC's verwendet.

1. TDA 8361 (Art.# : 752365) bzw. TDA 8362-N3 (Art.# : 752351)
2. TDA 8361-A (Art.# : 752374) bzw. TDA 8362-A (Art.# : 752379)

In beiden Fällen kann TDA 8362 durch TDA 8361 ersetzt werden, da die SECAM-Funktionen im TDA 8362 in unseren Geräten nicht benötigt werden. Diese unterstützen nur Pal B/G (IC10 nicht bestückt).

Die IC's unter **Pkt.1** sind aber **NICHT** mit denen unter **Pkt.2 kompatibel**.

Bei Geräten, die mit AUTO-CUT-OFF ausgerüstet sind, wurde TDA 8361-A bzw. TDA 8362-A verwendet (Schaltbild Nr. 88.65.50.36.800, **RGB-Endstufenplatine 1.460.00T Art.Nr.: 720247**).

Geräte mit manueller CUT-OFF-Einstellung sind mit dem TDA 8361 bzw. TDA 8362-N3 ausgerüstet (Schaltbild Nr. 88.65.50.36.500, **RGB-Endstufenplatine 01.438.00 Art.Nr.: 720233**).

Das passende Schaltbild ist jedem Gerät beigelegt.

Videotext über Scart:

Wir möchten an dieser Stelle darauf hinweisen, daß diese Funktion vom CTV 287, CTV 289 und CTV 290 bei den ersten Geräten **nicht** unterstützt wurde. Hierbei handelt es sich **nicht** um einen technischen **Defekt**.

Diese Funktion kann nachgerüstet werden. Eine entsprechende Platine ist im Schaltbild bereits abgebildet. Der Nachrüstsatz hat die Art.Nr.: 720248.

Mit freundlichen Grüßen

Ihr CTC-Clatronic-Kundendienst

RÉCEPTEUR DE TÉLÉVISION AVEC SYSTÈME AUTOMATIQUE "CUT-OFF"

Quand on allume l'appareil en appuyant sur l'interrupteur general 1, des lignes blanches apparaissent en haut de l'écran pendant quelques secondes.

Ceci n'est pas en défaut. Le système automatique "CUT-OFF" vérifie le tube cathodique en position "CUT-OFF", ainsi la luminosité et le contraste restent stables pendant la durée de vie du tube.

RECEPTOR DE TV CON SISTEMA AUTOMATICO DE "CUT-OFF"

Si se utiliza el interruptor de encendido y apagado 1, apareceran algunas lineas blancas en la parte superior de la pantalla durante un segundo; esto no es un defecto, si no que es una operacion automatica de comprobar la condicion de "CUT-OFF" del tubo de imagen a fin de garantizar la estabilidad de brillo y contraste a lo largo del ciclo de vida del mismo.

TV RECEIVER WITH AUTOMATIC "CUT-OFF" SYSTEM

Using the ON-OFF switch 1 some white lines will appears on top of the screen for a second; this is not a defect but it is an automatic operation to check the picture tube in the CUT-OFF condition to guarantee the brightness and contrast stability during life cycle of the picture tube.

TELEVISOR COM SISTEMA DE DESLIGAR AUTOMÁTICO

Se ligar o televisor usando o botão ON-OFF 1 aparecem por uns segundos algumas linhas brancas no topo do ecran; isto não é um defeito mas uma operação automática de verificação do cinescópio na função de desligar, para garantir a estabilidade do brilho e contraste durante o ciclo de vida do cinescópio.

CARATTERISTICA DEI TVC EQUIPAGGIATI CON DISPOSITIVI PER AVERE IL CUT-OFF AUTOMATICO.

I televisori equipaggiati con il dispositivo per il CUT-OFF automatico, che consente una totale uniformità della temperatura del bianco garantendo un'assoluta stabilità della luminosità e del contrasto durante tutta la vita del cinescopio, presentano per un tempo inferiore ad un secondo, ad ogni accensione tramite l'interruttore di rete, la visione di alcune righe bianche nella parte alta dello schermo.

La funzione di tali righe é quella di valutare le condizioni del cinescopio e quindi tramite i sistemi di controllo automatico pilotarlo in modo ottimale.

FERNSEHGERÄTE MIT AUTOMATISCHER SPERRPUNKTEINSTELLUNG DER BILDRÖHRE. (Automatic "CUT-OFF" System)

Beim Einschalten des Gerätes über den Netzschalter können kurzzeitig weiße Linien am oberen Bildrand erscheinen.

Diese automatische Kontrolle der Bildröhre garantiert gleichbleibende Helligkeit und Kontrast während der gesamten Lebensdauer der Bildröhre

TV-APPARAT MED AUTOMATISK "CUT-OFF" SYSTEM

Hvis apparatet slukkes og igen tændes med netafbryderen (1) vil der kunne ses nogle hvide linier i toppen af billedet i ca. et sekund.

Dette skyldes ikke en fejl i apparatet, men er blot et automatisk check af billedrørets "CUT-OFF" tilstand. Den automatiske "CUT-OFF" kredsløb sikrer stabilitet i lys-og kontrast-balancen i hele billedrørets levetid.

TV-TOESTEL MET AUTOMATISCH "CUT-OFF" SYSTEM

Bij het inschakelen verschijnen bovenaan het scherm enkele witte lijnen gedurende een tijdje. Dit is geen delect. Automatisch wordt de beeldbuis getest in de "CUT-OFF" positie, om zodoende licht en contrast stabiel te houden gedurende de levensduur van de beeldbuis.

TV-MOTTAGARE MED AUTOMATISKT "CUT-OFF" SYSTEM

Att använda On-Off knappen 1

Några vita linjer kan uppträda längst upp på skärmen i en sekun; detta är ej något fel utan en automatisk kontroll av bildröret i CUT-OFF läge för att garantera stabilitet vad gäller klarhet och kontrast för bildrørets livslängd.

88 65.02.878.60

CTC CLATRONIC®

INTERNATIONAL GmbH

Industriering Ost 40
47906 Kempen

Telefon-Zentr. : 02152/2006-0
Telefon-TKD : 02152/2006-22
Fax : 02152/2006-60

Technische Information

Datum: 31.05.1995

Modell: CTV 287/289/290 (Chassis F.11 mit Auto-Cut-Off)

lfd. Nr. 20A

Gerät läuft nicht an, kein Bild

folgende Bauteile prüfen

C 121 470uF / 25V

D 35 BA 157

D 36 1N4001

Grünliches Bild

Bei Geräten mit Auto-Cut-Off kann es vorkommen, daß trotz messen der Bildröhrenarbeitspunkte beim Einschalten, das Bild einen Grünstich hat.

Dies ist durch folgende kleine Änderung an der Bildröhrenplatine zu beheben.

R 17 an Pin 6 + R 19 an Pin 14 von IC 1 durch eine Diode 1N4148 ersetzen. Anode an IC.

von Pin 6 einen 820K Widerstand gegen Masse

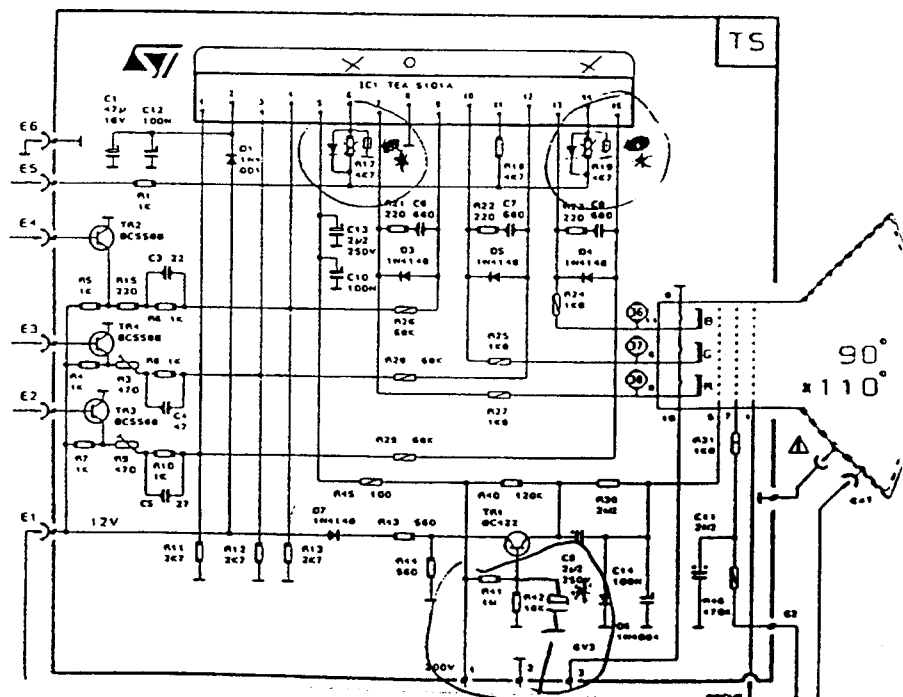
von Pin 14 einen 1M2 Widerstand gegen Masse

parallel zu R 42 einen Elko 10uF / 63V mit + an der Basis von TR 1

Mit freundlichen Grüßen

Ihr CTC-Clatronic-Kundendienst

Anlage: Schaltungsauszug



INTRODUCTION

Auto - Cut - Off

The television is built around a high-volume integration integrated circuit TDA 8361/2A, a new processor for PAL and NTSC system television.

This TDA 8361/2A processor combines all the small signal functions required of a colour television receiver, including operation of an external video and audio of a S-VHS (separate Luminance and Chrominance).

Processor TDA 8361/2A is a video processor containing functions handling HF, sound, horizontal and vertical synchronisation, PAL/NTSC decoding, and RGB control and a black current stabilisation circuit.

It was implemented using BIMOS technology, which combines BIPOLAR methods for handling high-frequency signal and MOS methods for handling digital parts.

In addition it used an integrated delay line TDA 4661, an audio output stage mono, stereo 6+6W, stereo 12+12 W, a vertical output stage TDA 3654B, and a horizontal output stage with BU 508D.

The power supply unit is of the flyback type and controlled by the TDA 4601 integrated circuit.

Principal functions common to both processor version TDA 8361/2A are :

- symmetric IF amplifier directly coupled to surface wave filter
- FM sound multistandard demodulator, not needing regulation
- chroma trap and integrated band-pass filters
- integrated luminance delay line
- PAL/NTSC automatic decoder
- self-regulating horizontal oscillator
- low dissipation (about 700 mW)
- possibility of selecting an external A/V source
- no black-level adjustment due to a black current stabilizer

Functions specific to TDA 8362A :

- multistandard IF circuit for positive and negative modulation
- simple interface with TDA 8395 (SECAM decoder) for PAL and SECAM multistandard applications

INTRODUCTION

The television is built around a high-volume integration integrated circuit TDA 8361/2, a new processor for PAL and NTSC system television.

This TDA 8361/2 processor combines all the small signal functions required of a colour television receiver, including operation of an external video and audio of a S-VHS (separate Luminance and Chrominance).

Processor TDA 8361/2 is a video processor containing functions handling HF, sound, horizontal and vertical synchronisation, PAL/NTSC decoding, and RGB control.

It was implemented using BIMOS technology, which combines MOS and bipolar methods.

The bipolar technology is used for high-frequency signal processing (ex. video signals) and the MOS technology is used in those parts handling digital signals.

In addition it used an integrated delay line TDA 4661, an audio output stage mono, stereo 6+6W, stereo 12+12 W, a vertical output stage TDA 3654B, and a horizontal output stage with BU 508D.

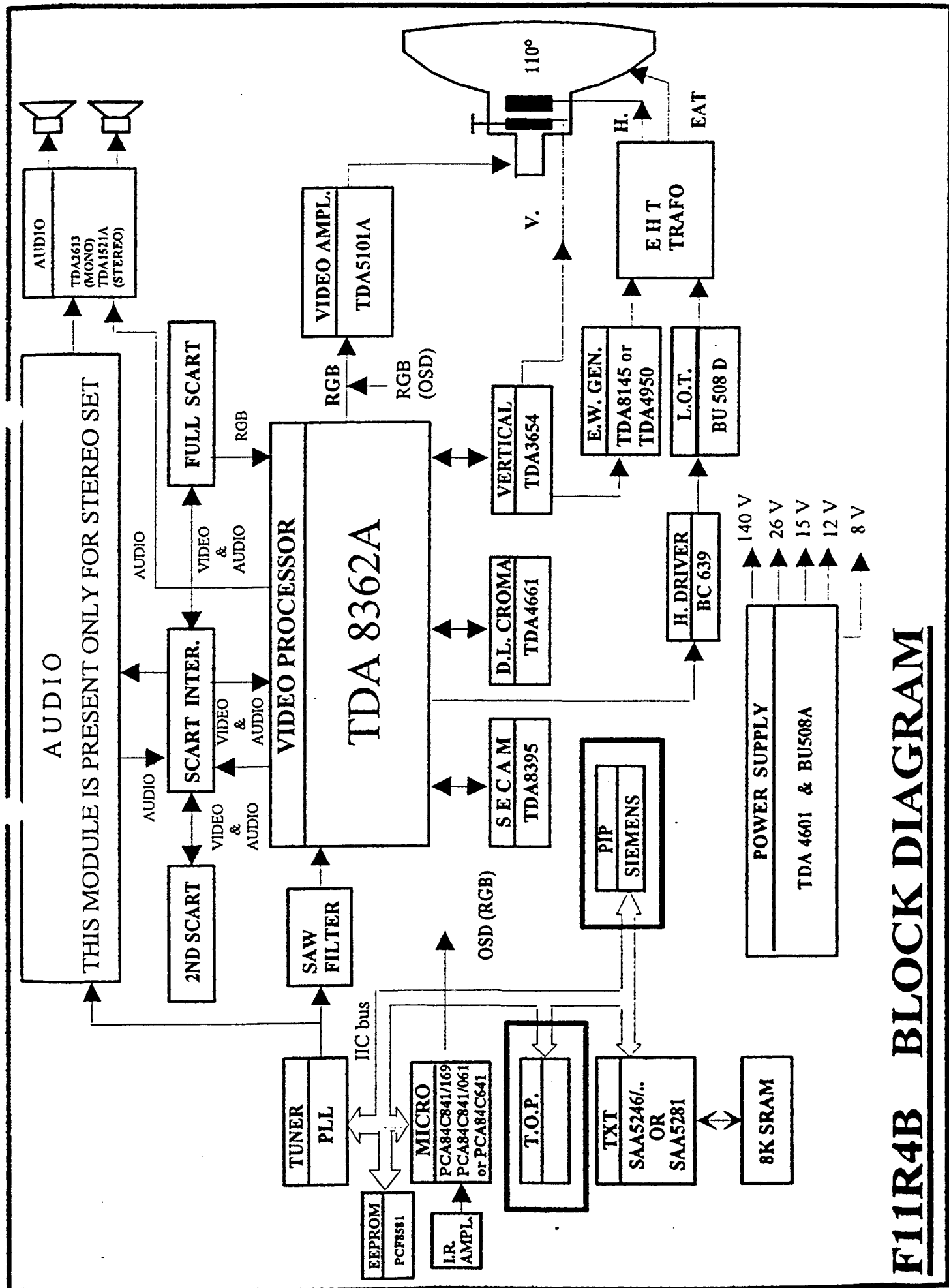
The power supply unit is of the flyback type and controlled by the TDA 4601 integrated circuit.

Principal functions common to both processor version TDA 8361/2 are :

- symmetric IF amplifier directly coupled to surface wave filter
- FM sound multistandard demodulator, not needing regulation
- chroma trap and integrated band-pass filters
- integrated luminance delay line
- PAL/NTSC automatic decoder
- self-regulating horizontal oscillator
- low dissipation (about 700 mW)
- possibility of selecting an external A/V source

Functions specific to TDA 8362 :

- multistandard IF circuit for positive and negative modulation
- simple interface with TDA 8395 (SECAM decoder) for PAL and SECAM multistandard applications



F11R4B BLOCK DIAGRAM

INTRODUCTION

The television is built around a high-volume integration integrated circuit TDA 8361/2, a new processor for PAL and NTSC system television.

This TDA 8361/2 processor combines all the small signal functions required of a colour television receiver, including operation of an external video and audio of a S-VHS (separate Luminance and Chrominance).

Processor TDA 8361/2 is a video processor containing functions handling HF, sound, horizontal and vertical synchronisation, PAL/NTSC decoding, and RGB control.

It was implemented using BIMOS technology, which combines MOS and bipolar methods.

The bipolar technology is used for high-frequency signal processing (ex. video signals) and the MOS technology is used in those parts handling digital signals.

In addition it used an integrated delay line TDA 4661, an audio output stage mono, stereo 6+6W, stereo 12+12 W, a vertical output stage TDA 3654B, and a horizontal output stage with BU 508D.

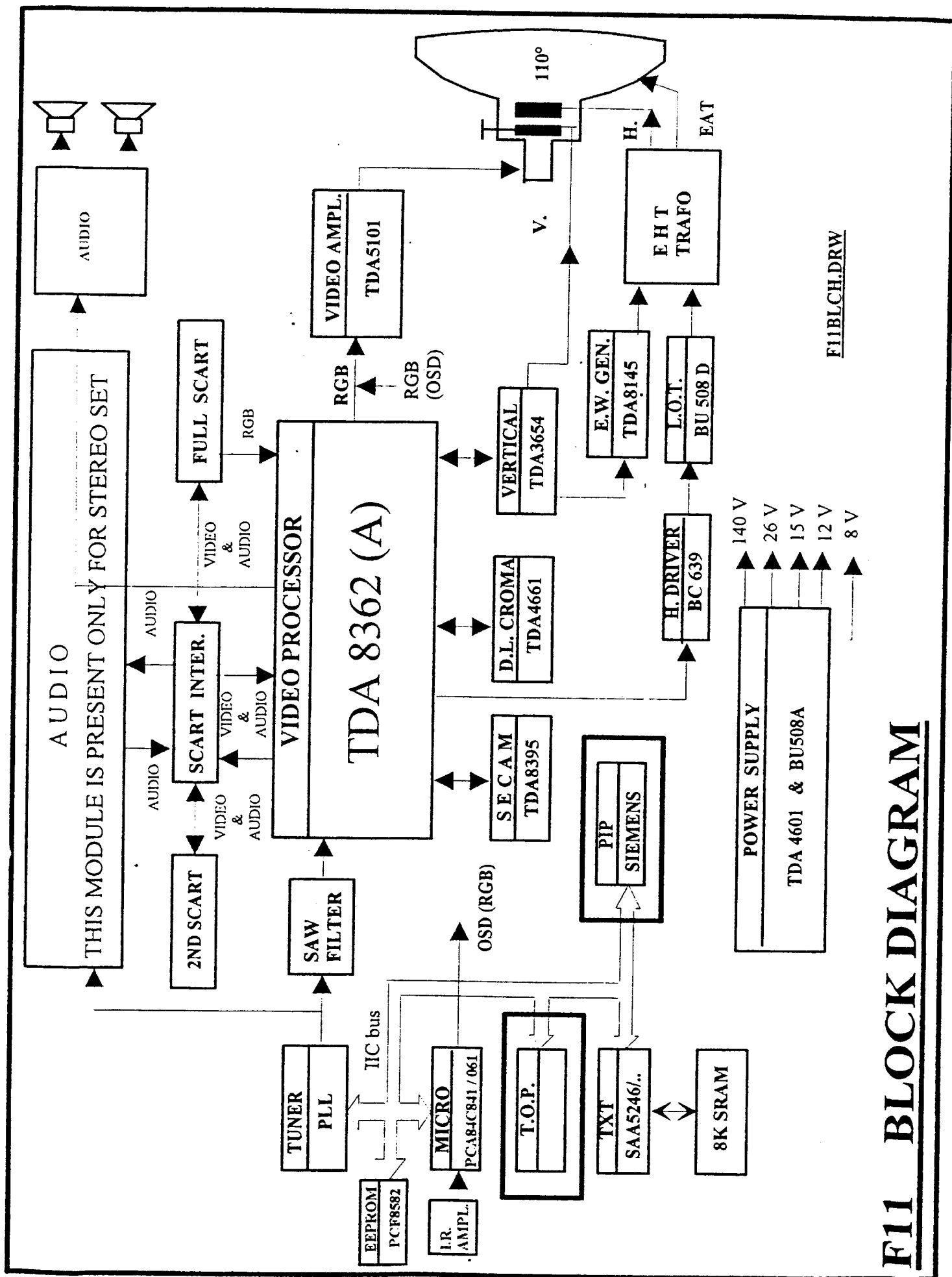
The power supply unit is of the flyback type and controlled by the TDA 4601 integrated circuit.

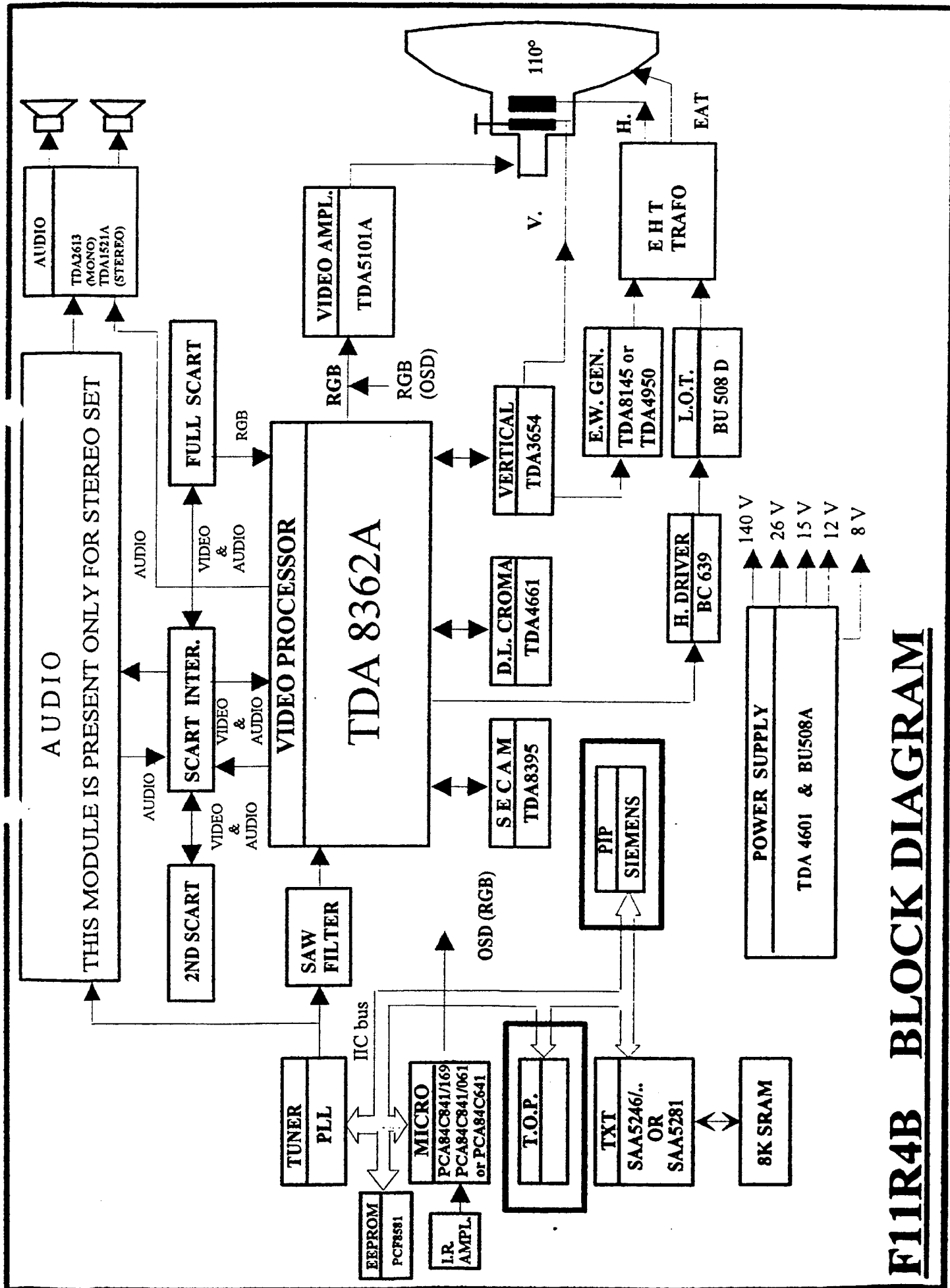
Principal functions common to both processor version TDA 8361/2 are :

- symmetric IF amplifier directly coupled to surface wave filter
- FM sound multistandard demodulator, not needing regulation
- chroma trap and integrated band-pass filters
- integrated luminance delay line
- PAL/NTSC automatic decoder
- self-regulating horizontal oscillator
- low dissipation (about 700 mW)
- possibility of selecting an external A/V source

Functions specific to TDA 8362 :

- multistandard IF circuit for positive and negative modulation
- simple interface with TDA 8395 (SECAM decoder) for PAL and SECAM multistandard applications





F11R4B BLOCK DIAGRAM

ALIGNMENT

Auto-Cut-Off

38.9 MHz and AFC (TP2)

Connect a 38.9 MHz intermediate-frequency generator to the tuner's IF output pin 17 and adjust the core L 4 so as to obtain 4,5 V at pin 9 of TDA 8361/2A.

POWER SUPPLY (TP3)

Measure the direct voltage at the terminals of diode DJ1 or D38 and potentiometer R162 so as to obtain a voltage of 142/152 V.

AGC (TP1)

Apply a 60dBuV (+/- 1 dB) RF signal, band III, channel 10-to-12, and adjust potentiometer R111 so as to obtain a voltage of about 8V at tuner pin no. 5 (This voltage depends on the tuner used; so check on the letter's characteristics.)

WHITE SETTING

ADJUSTMENT WITH ANALOG VOLTMETER

- Power on TV SET
- Tune to a signal with white screen
- Contrast control set to minimum
- Adjust brightness to 2,5 V.D.C. on pin 17 TDA8361/2A
- Analog voltmeter 200 V.D.C. full scale
- Check for the highest P.T. cathode voltage than adjust it for 165 V.D.C. via G2 potentiometer (on E.H.T. transformer)

VERTICAL CENTERING

- Adjust R194 (VA) for proper vertical height.
 - Adjust R192 (VL) for proper vertical linearity.
- Cut /solder the R215 and/or R216 and/or R257 in order to obtain the right vertical geometric centering between CRT and signal. (for example, use a test-pattern signal)

HORIZONTAL CENTERING AND EAST-WEST CORRECTION

- Adjust R186 (HC) for proper horizontal centering
- Adjust R205 (HA) for proper horizontal width
- Adjust R200 (OW) for proper pin-cushion
- Adjust R203 (TZ) for proper trapezium

ALIGNMENT

38.9 MHz and AFC (TP2)

Connect a 38.9 MHz intermediate-frequency generator to the tuner's IF output pin 17 and adjust the core L 4 so as to obtain 3,5 V at pin 44 of TDA 8361/2.

POWER SUPPLY (TP3)

Measure the direct voltage at the terminals of diode DJ1 or D38 and potentiometer R162 so as to obtain a voltage of 142/152 V.

AGC (TP1)

Apply a 60dBuV (+/- 1 dB) RF signal, band III, channel 10-to-12, and adjust potentiometer R111 so as to obtain a voltage of about 8V at tuner pin no. 5 (This voltage depends on the tuner used; so check on the letter's characteristics.)

WHITE SETTING

- Tune to a channel with colour test-pattern signal.
- Position level potentiometers R18, R15, R14 and gain potentiometers R3 and R9 on the CRT socket, locating centrally
- Adjust the TV receiver to maximum brightness, minimum colour and contrast.
- Switch the TV to AV using the corresponding button on the remote control.
- Adjust potentiometer G2 (EHT transformer) to obtain a barely visible screen. The screen usually appears with a predominant colour hue.
- Adjust the level potentiometers of the order two cathodes that are different from the predominating colour in order to obtain the white screen. If, for example, the predominant colour of the screen is red, the potentiometers of the blue cathode R14 and the green cathode R15 are adjusted.
- Return to TV mode with the appropriate remote-control button.
- Check that the hue of the colours of the colour of test-pattern picture are correct. If necessary adjust the potentiometers R3-R9

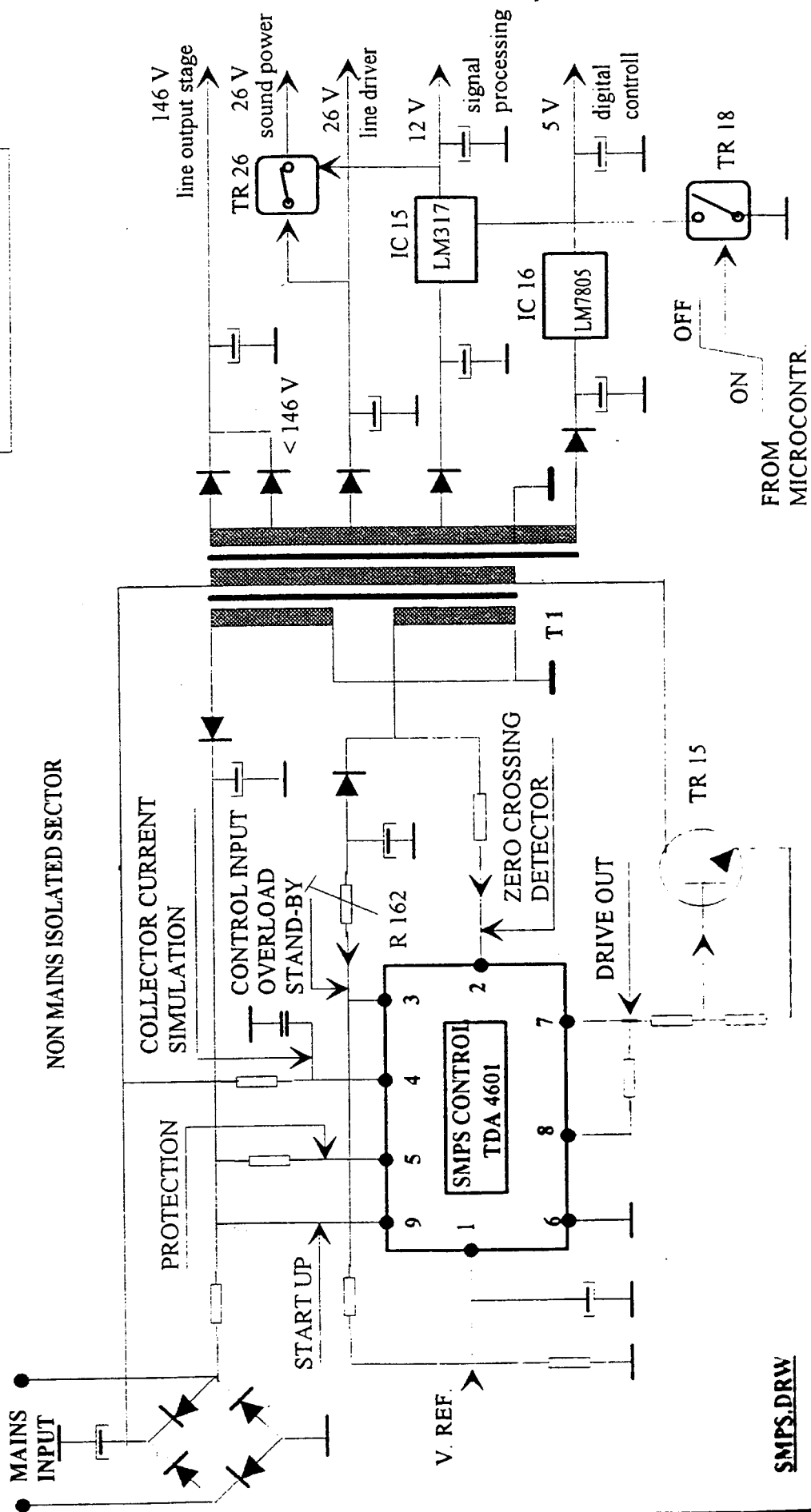
VERTICAL CENTERING

- Adjust R194 (VA) for proper vertical height
 - Adjust R192 (VL) for proper vertical linearity
- Cut /solder the R215 and/or R216 in order to obtain the right vertical geometric centering between CRT and signal (for example, use a test-pattern signal)

HORIZONTAL CENTERING AND EAST-WEST CORRECTION

- Adjust R186 (HC) for proper horizontal centering
- Adjust R205 (HA) for proper horizontal width
- Adjust R200 (OW) for proper pin-cushion
- Adjust R203 (TZ) for proper trapezium

F 11 **S.M.P.S.**



SMPS.DRW

STEREO NICAM BG MODULE

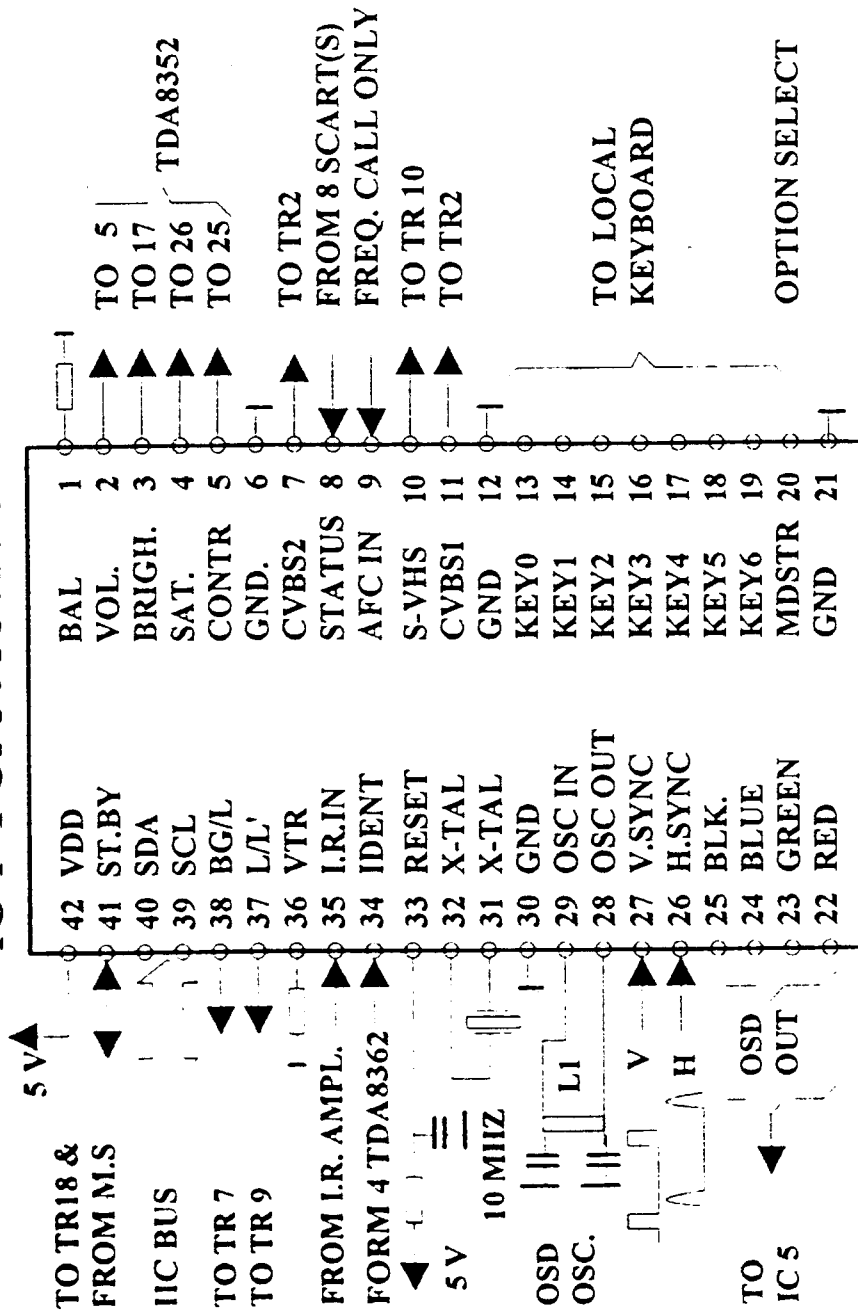
- Apply antenna signal PAL-BG DUAL 5,5 / 5,74
- Tune above signal
- Remove sound carrier
- Adjust L 3 for the minimum video signal on pin 17 of IC 5
- Insert the sound carrier modulation R= 1 KHz L= 3 KHz
- Adjust L 7 for maximum sinusoidal signal on pin 9 of IC 5
- Adjust L 5 for maximum sinusoidal signal on pin 8 of IC 5
- Switch pattern generator from Dual to Stereo
- Eliminate left modulation (3 KHz)
- Adjust R 79 for minimum sinusoidal signal on pin 4 connector SM audio
- Reinsert left modulation and verify right stereo function
- Apply a Nicam BG signal in antenna
- Verify the correct demodulation of Nicam signal (no alignment is required)

STEREO NICAM DECODER STANDARD I

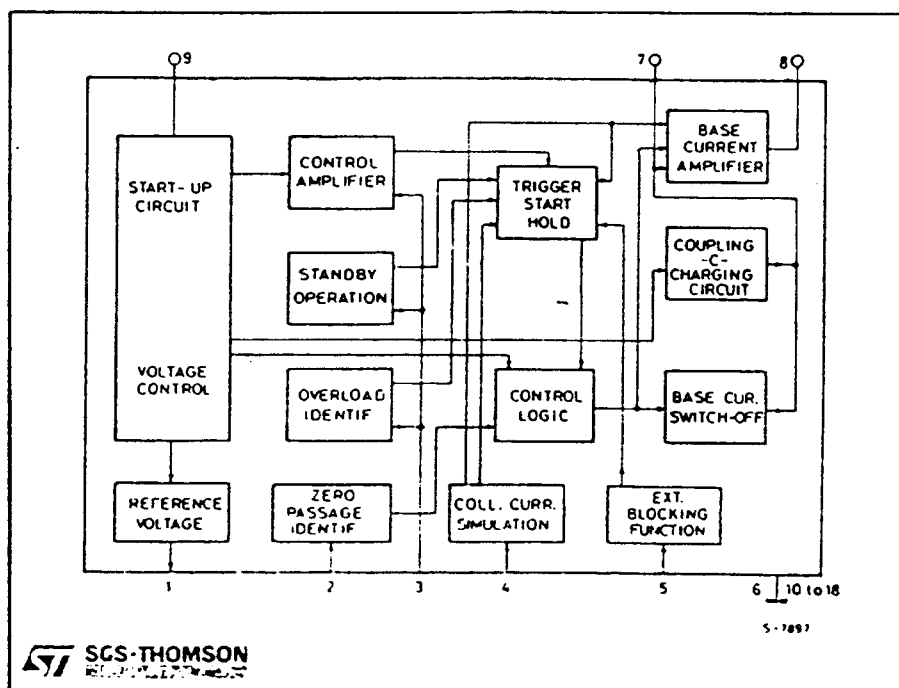
- Tune to a colour bar signal applied to the antenna (E.S. PAL I-NICAM)
- Remove the sound carrier
- Adjust L 3 for the minimum video signal on pin 17 of IC 5
- Insert analogue sound carrier
- Adjust L 7 for maximum sinusoidal signal on pin 9 of IC 5
- Adjust R 79 to obtain the same signal between NICAM and MONO FM signals.

F 11 MICROCONTROLLER

IC 1 PCF84C841 / 061



POWER SUPPLY - TDA 4601

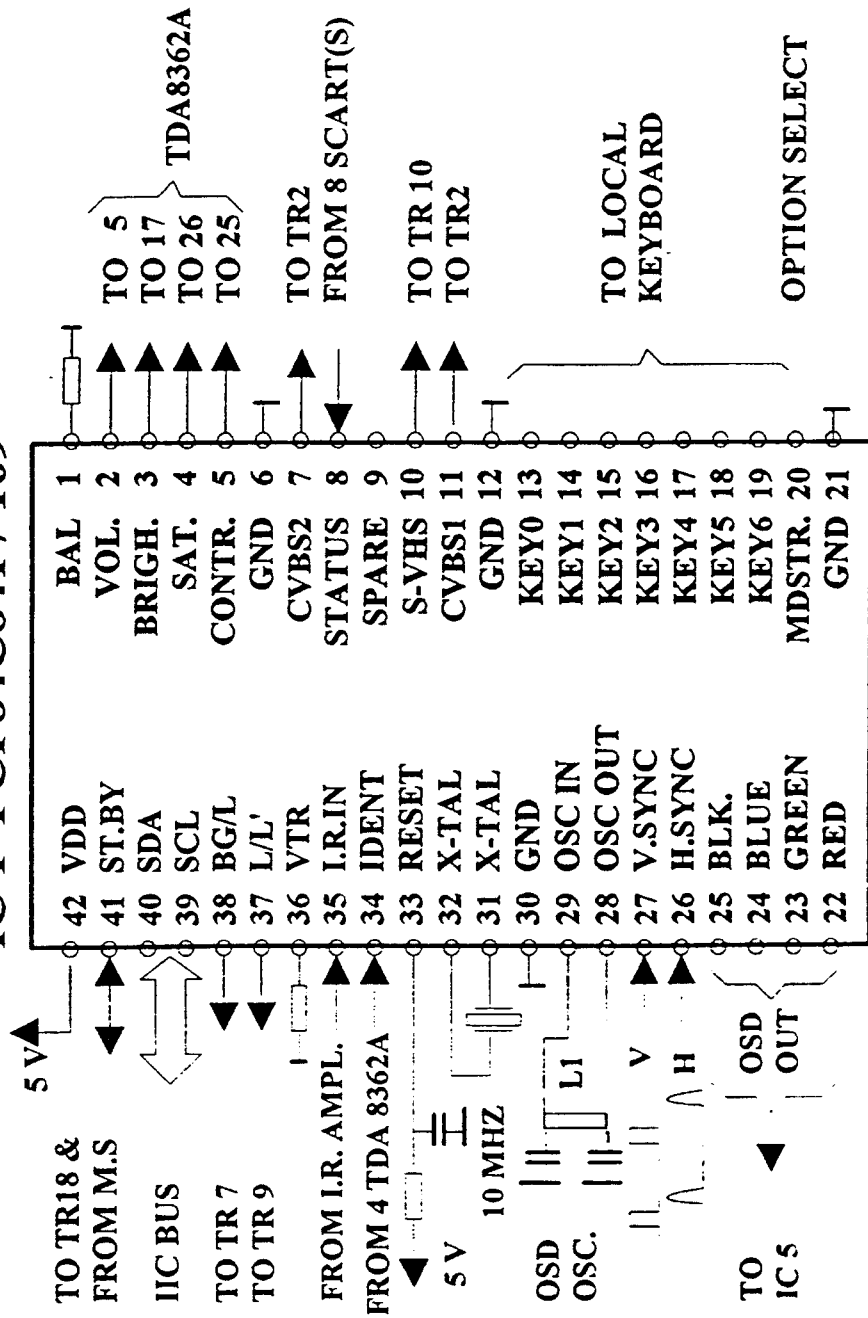


Functional description.

Integrated circuit TDA 4601 is a switch-mode power controller that is particularly suited to TV use. It is able to directly drive a bipolar current with a base current of 1.2 A. It is a controller complete with all functions for normal operation, for transient operation (ex. soft-start), and for malfunction operation (protection against overload and short-circuits).

F 11 MICROCONTROLLER

IC 1 PCF84C841 / 169



PCA 84C841/061 pinout description

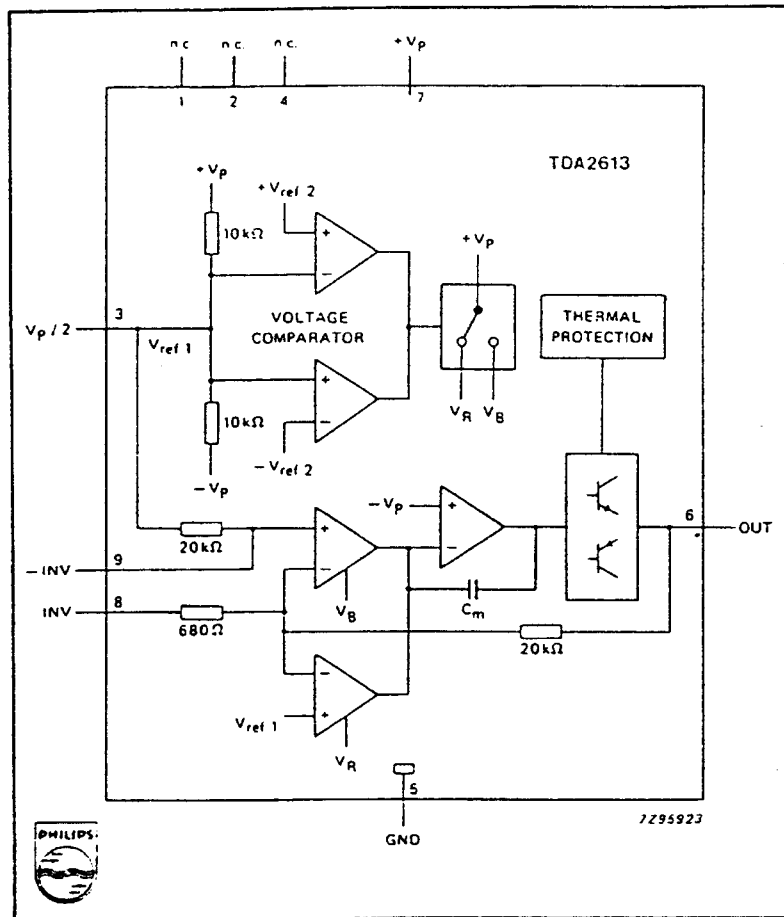
- 1 output balance (not active for stereo BG and nicam)
- 2 volume output (only mono and stereo from scart- not active for stereo BG e nicam)
- 3 brightness output
- 4 saturation output
- 5 contrast output (TRE-not active for stereo BG and nicam)
- 6 bass output (not active for stereo BG and nicam)
- 7 CVBS2
- 8 status
- 9 spare
- 10 S-VHS
- 11 CVBS1
- 12 RGB
- 13 input/output keyboard
- 14 input/output keyboard
- 15 input/output keyboard
- 16 input/output keyboard
- 17 input/output keyboard
- 18 input/output keyboard
- 19 input/output keyboard
- 20 strobe output
- 21 ground
- 22 OSD red output
- 23 OSD green output
- 24 OSD blue output
- 25 OSD fast blanking
- 26 horizontal synchro input
- 27 vertical sinchro input
- 28 OSD LC oscillator
- 29 OSD LC oscillator
- 30 ground
- 31 xtal 10 MHz oscillator input
- 32 oscillator output
- 33 reset
- 34 identification input
- 35 IR input
- 36 n.c.
- 37 L/L' or dual
- 38 BG/L or stereo
- 39 SCL i2cbus
- 40 SDA i2cbus
- 41 stand-by
- 42 power supply

Functional description

CTV 322S tuning is a control system for television based on micro-controller PCA84C841/061. It is a frequency synthesiser system with O.S.D. (On-screen-display), sound and colour are controlled by 5 digital/analog converters.

N.B. For stereo BG and nicam TVC, volume, balance, treble and bass controls are handled in digital level in i2cbus.

AUDIO - TDA 2613



PINNING TDA 2613

- 1- not connect
- 2- not connect
- 3- 1/2 tension
- 4- not connect
- 5- ground
- 6- output
- 7- power supply
- 8- inverting input
- 9- non-inverting input

Functional description

TDA 2613 is a monophonic output amplifier. It requires no external component. It drives 16 Ohm speakers. Gain is set internally at 30 dB.

PCA 84C841/169 pinout description

- 1 output balance (not active for mono, stereo BG and nicam)
- 2 volume output (only mono and stereo from scart- not active for stereo BG e nicam)
- 3 brightness output
- 4 saturation output
- 5 contrast output (TRE-not active for mono, stereo BG and nicam)
- 6 bass output (not active for mono, stereo BG and nicam)
- 7 CVBS2
- 8 status
- 9 spare
- 10 S-VHS
- 11 CVBS1
- 12 RGB
- 13 input/output keyboard
- 14 input/output keyboard
- 15 input/output keyboard
- 16 input/output keyboard
- 17 input/output keyboard
- 18 input/output keyboard
- 19 input/output keyboard
- 20 strobe output
- 21 ground
- 22 OSD red output
- 23 OSD green output
- 24 OSD blue output
- 25 OSD fast blanking
- 26 horizontal synchro input
- 27 vertical sinchro input
- 28 OSD LC oscillator
- 29 OSD LC oscillator
- 30 ground
- 31 xtal 10 MHz oscillator input
- 32 oscillator output
- 33 reset
- 34 identification input
- 35 IR input
- 36 VTR
- 37 L/L'
- 38 BG/L or stereo
- 39 SCL i2cbus
- 40 SDA i2cbus
- 41 stand-by
- 42 power supply

N.B. For stereo BG and nicam TVC, volume, balance, treble and bass controls are handled in digital level in i2cbus.

AUDIO 2x6 W - TDA 1521A

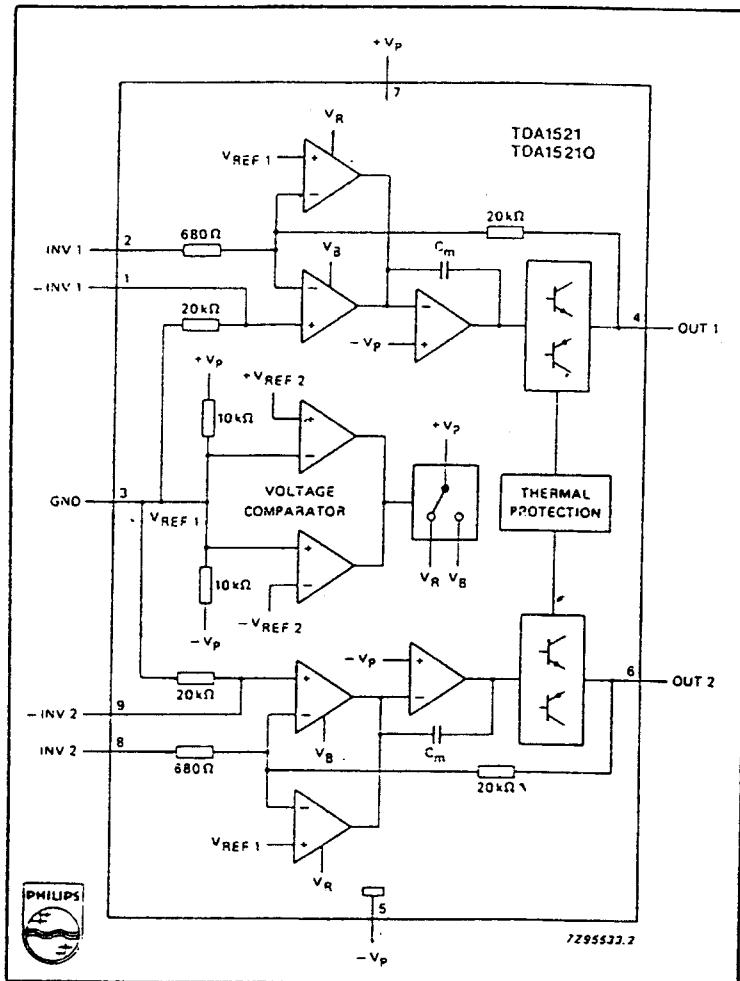
**PINNING TDA 1521A**

- 1- non-inverting input 1
- 2- inverting input 1
- 3- ground or 1/2 power supply
- 4- output 1
- 5- ground or negative supply
- 6- output 2
- 7- power supply
- 8- inverting input 2
- 9- non-inverting input 2

Functional description

TDA 1521A is a stereophonic 2x6 W audio output amplifier. Gain is set internally at 30dB

AUDIO 2x12 W - TDA 1521



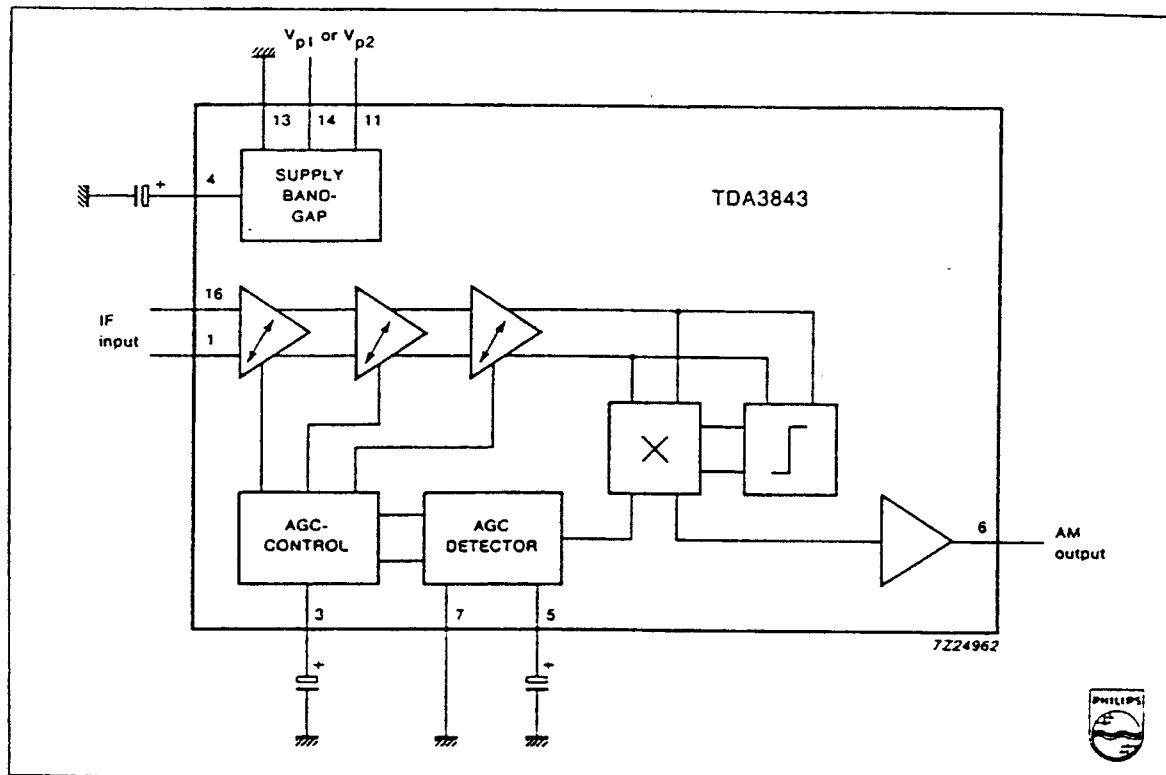
PINNING TDA 1521

- 1- non-inverting input 1
- 2- inverting input 1
- 3- ground or 1/2 power supply
- 4- output 1
- 5- ground or negative supply
- 6- output 2
- 7- power supply
- 8- inverting input 2
- 9- non-inverting input 2

Functional description

TDA 1521 is a stereophonic 2x12W audio output amplifier. Gain is set internally at 30dB.

L-L' STANDARD AM AUDIO - TDA 3843

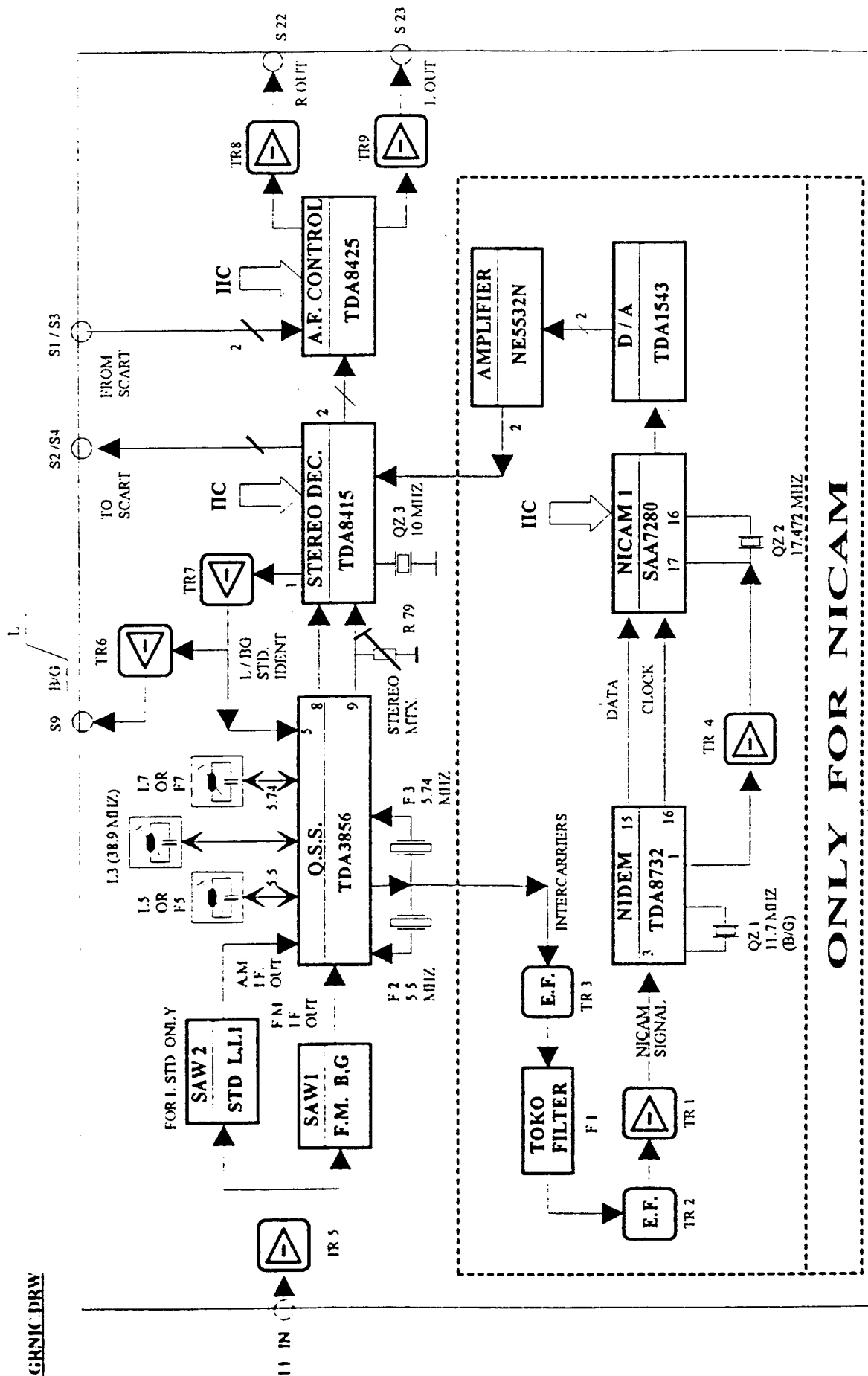


Functional description

TDA 3843 handles AM sound demodulation for standard L and L'.

F 11 AUDIO MODULE BLOCK DIAGRAM

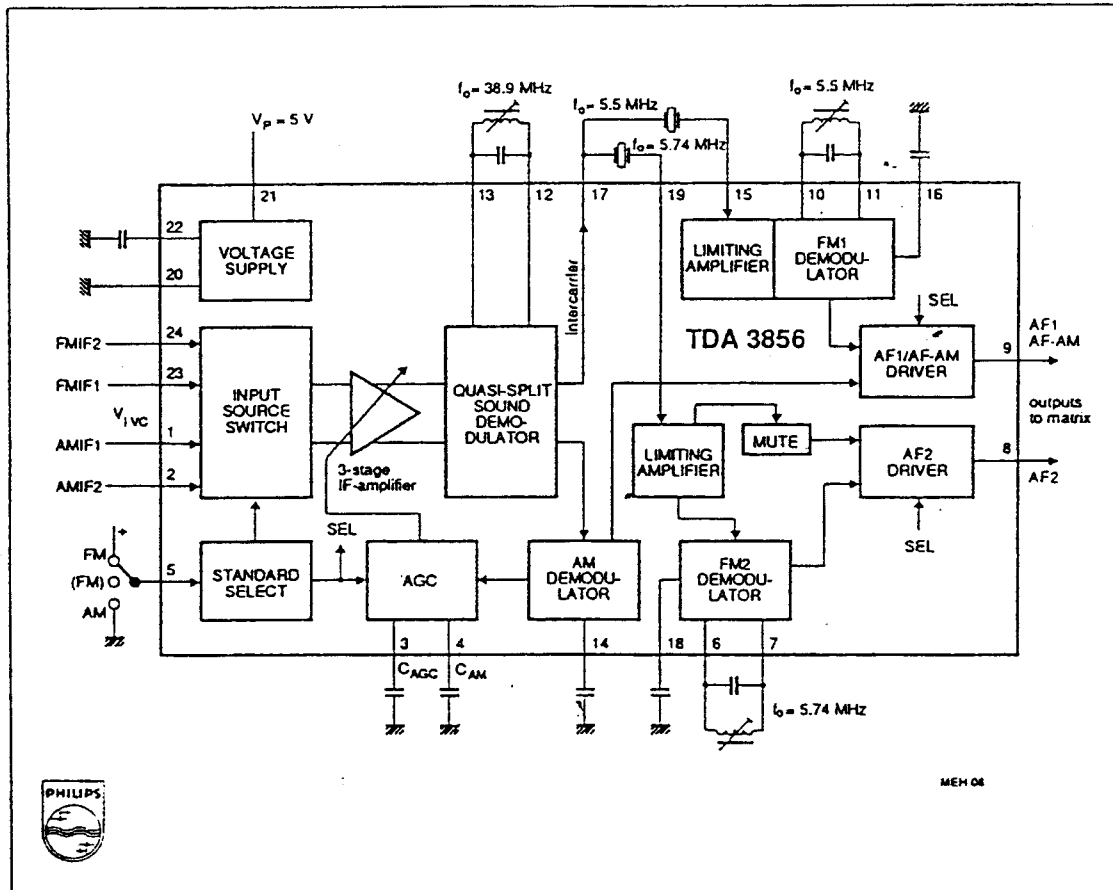
STIGERNIC.DRAW



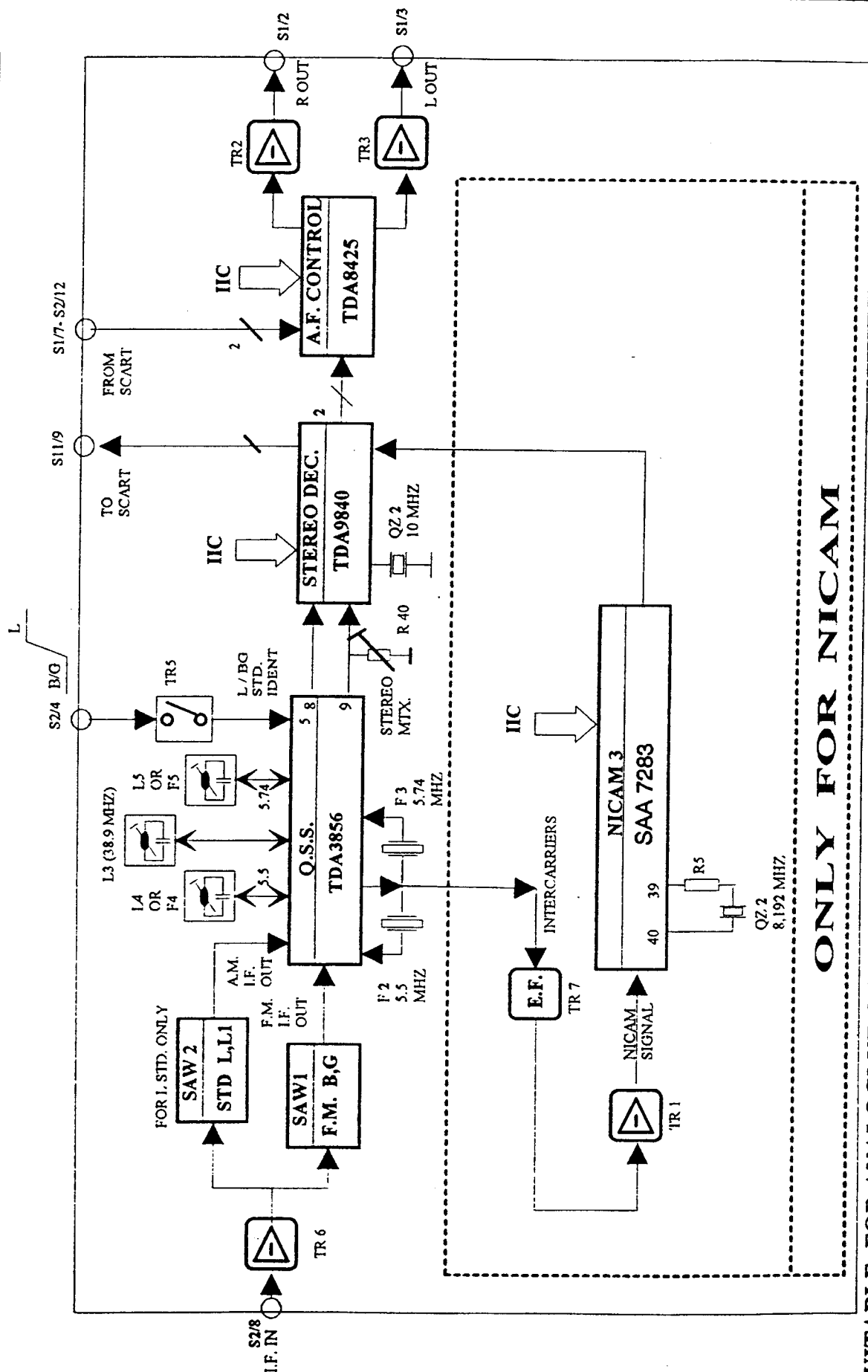
ONLY FOR NICAM

SUITABLE FOR ANALOGUE & DIGITAL STEREO & MONO A.M..

STEREO DECODER

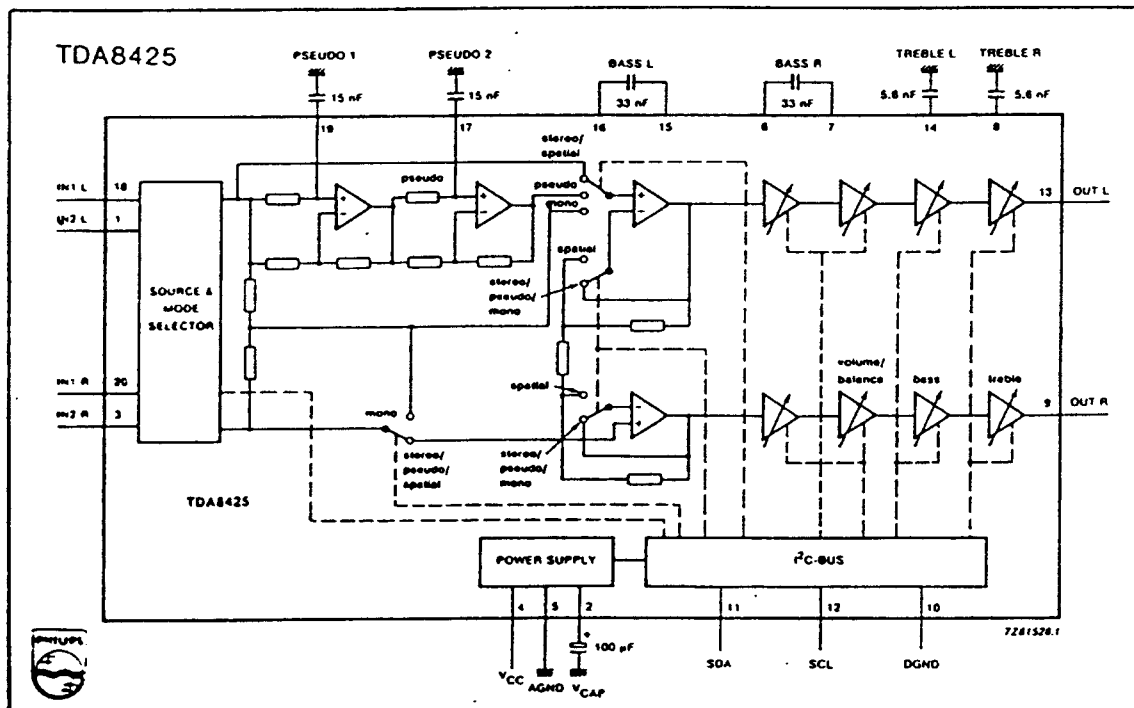
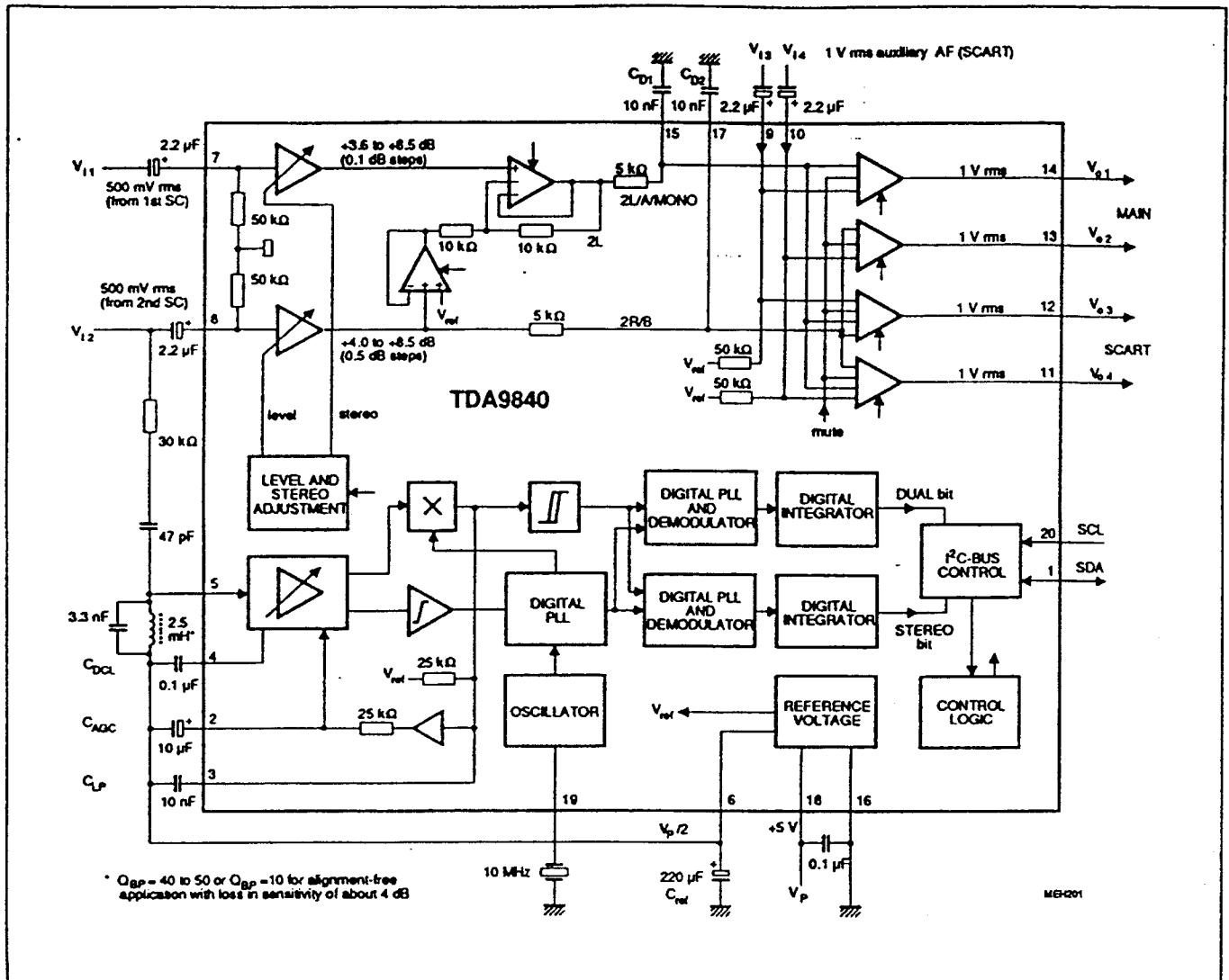


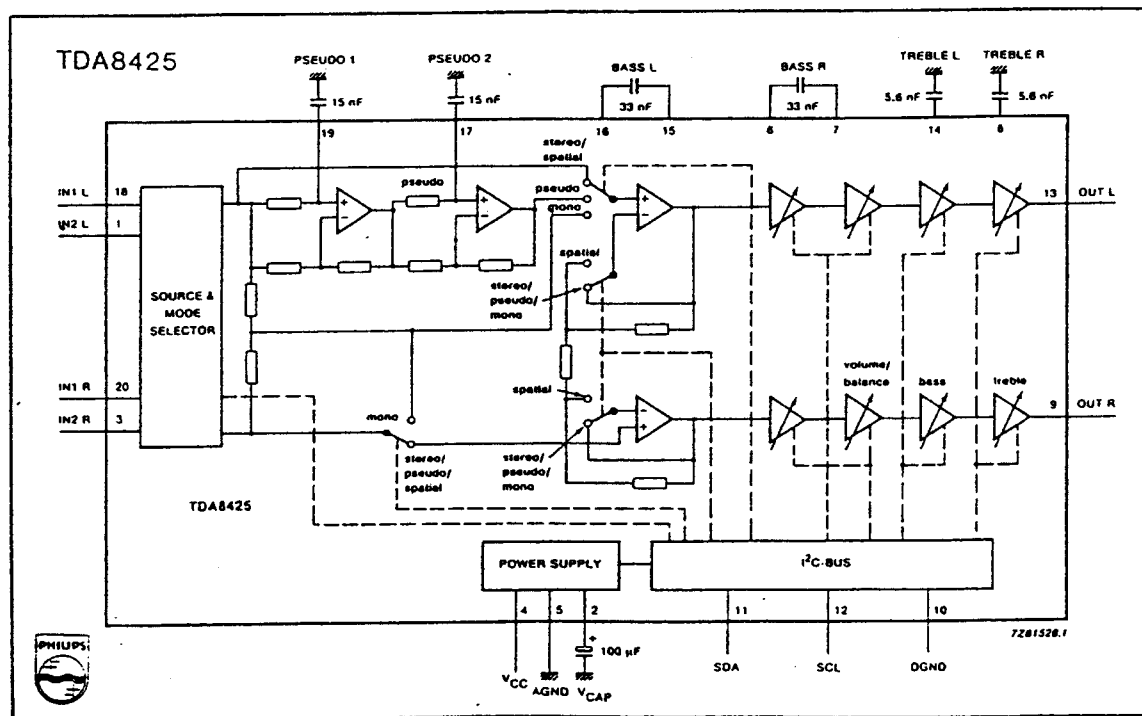
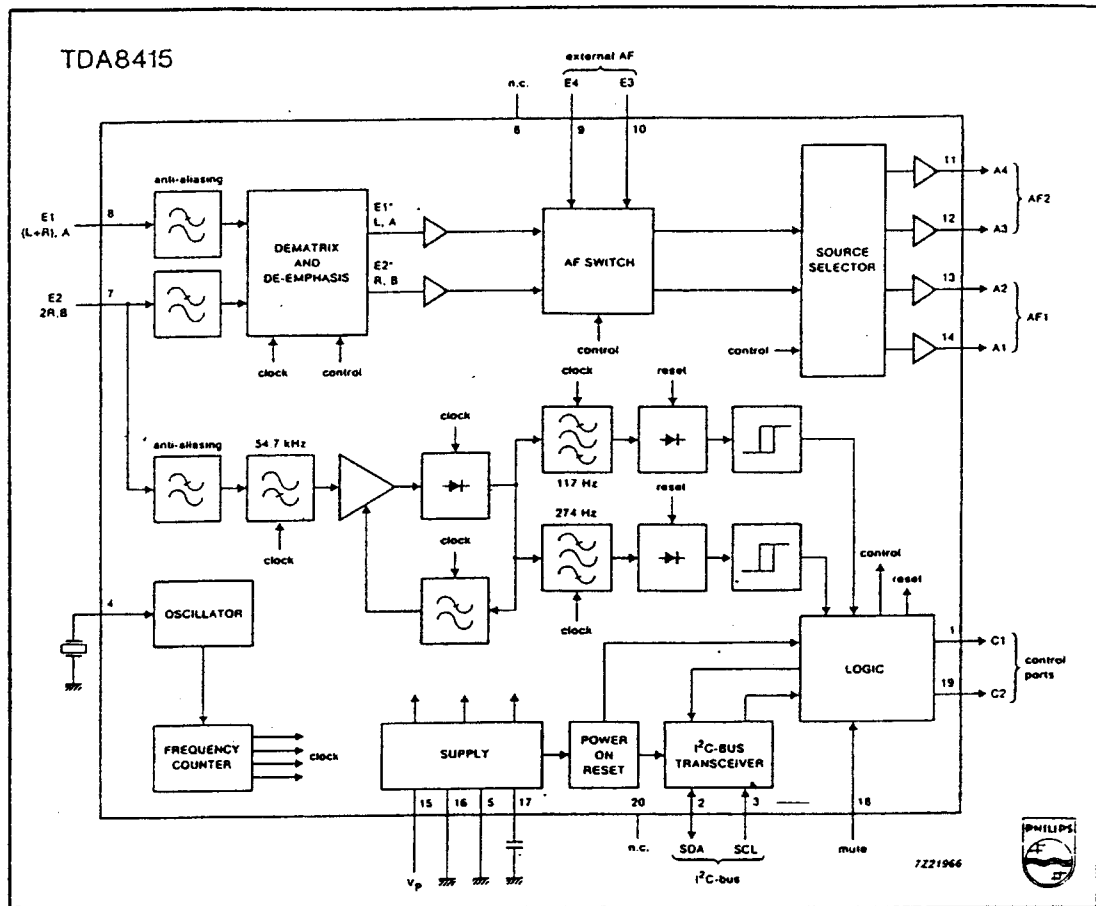
F 11 AUDIO MODULE BLOCK DIAGRAM



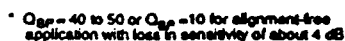
ONLY FOR NICAM

SUITABLE FOR ANALOGUE & DIGITAL STEREO & MONO A.M.



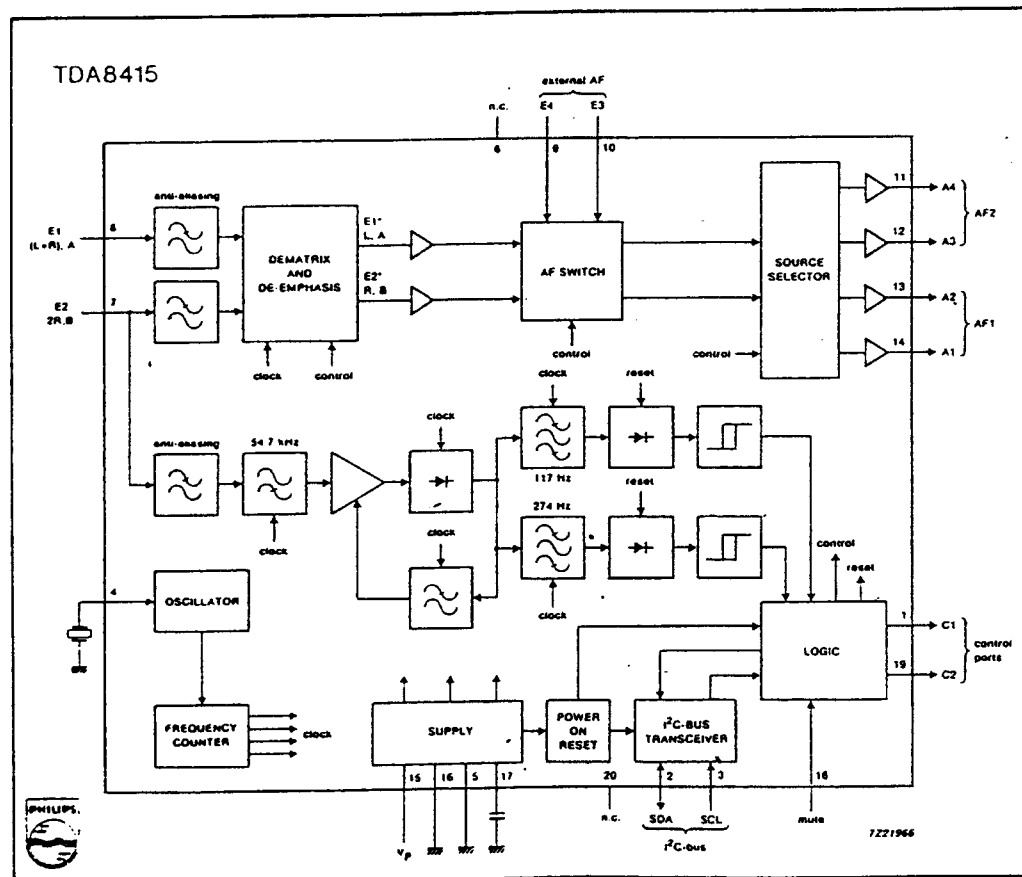
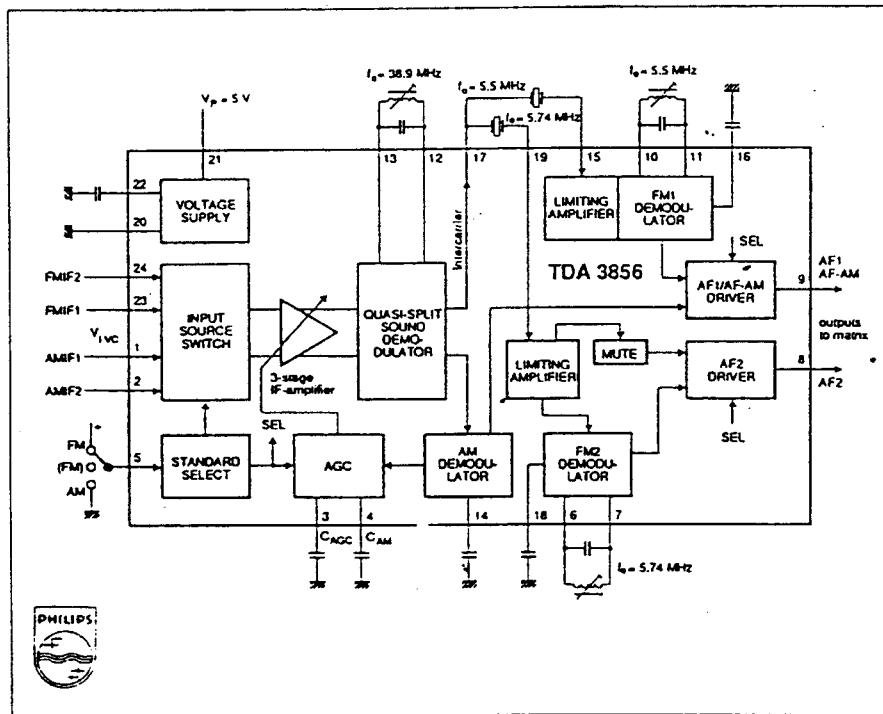


STEREO DECODER - NICAM 3

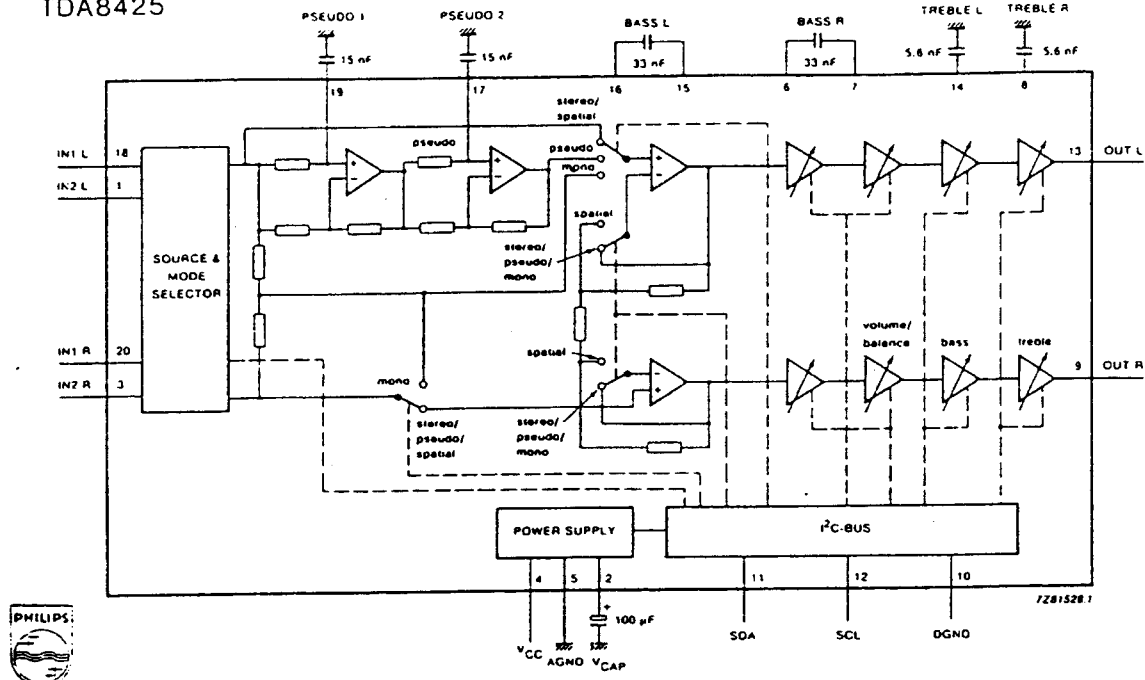


162

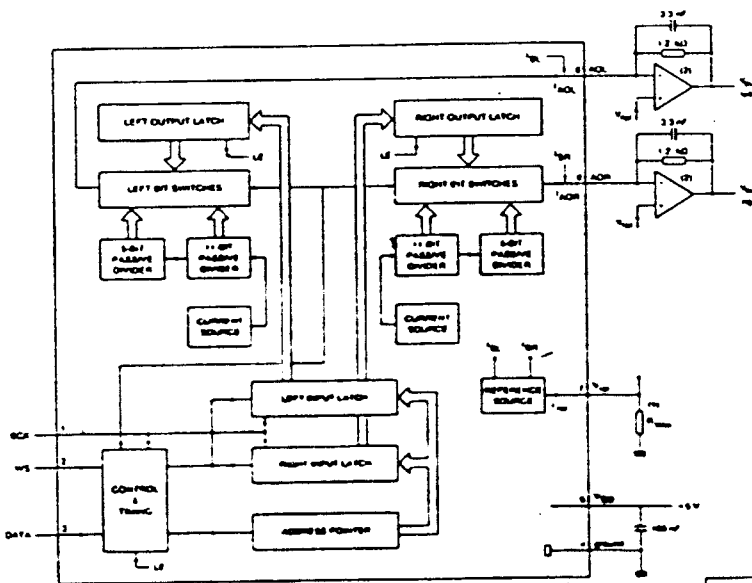
STEREO NICAM DECODER



TDA8425

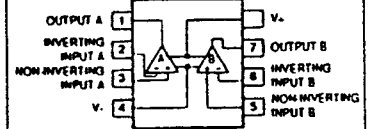


TDA1543



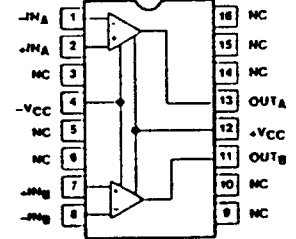
- (1) Optional
- (2) 2 x 1/2 NE5532

FE, N Packages



TOP VIEW

D Package¹

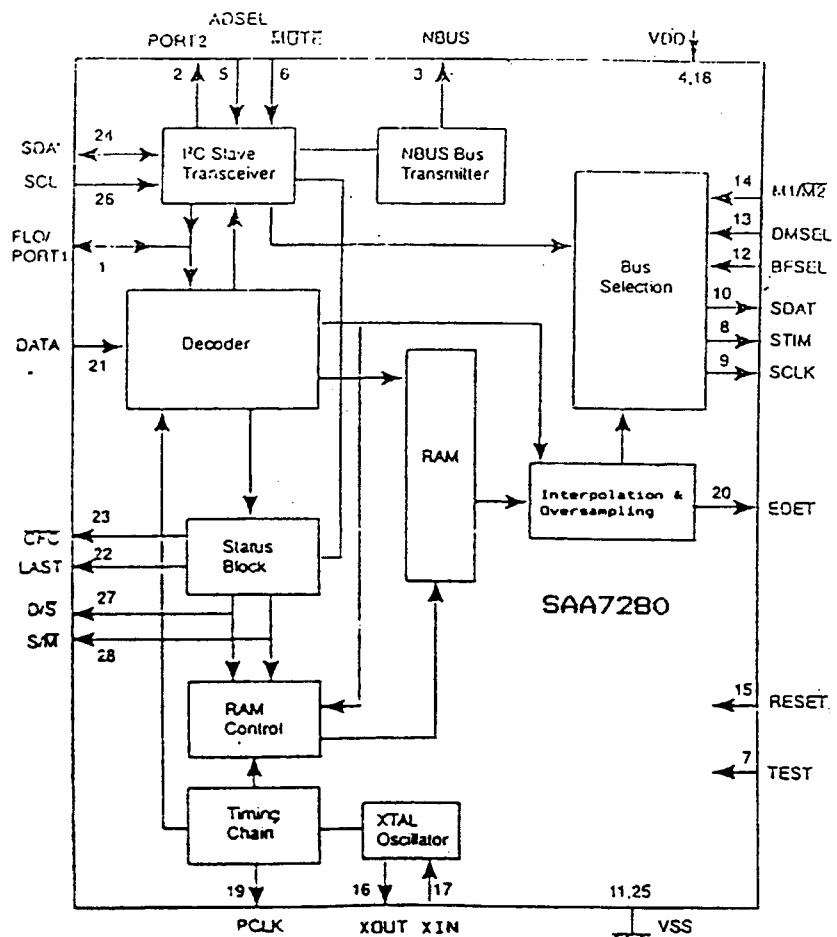
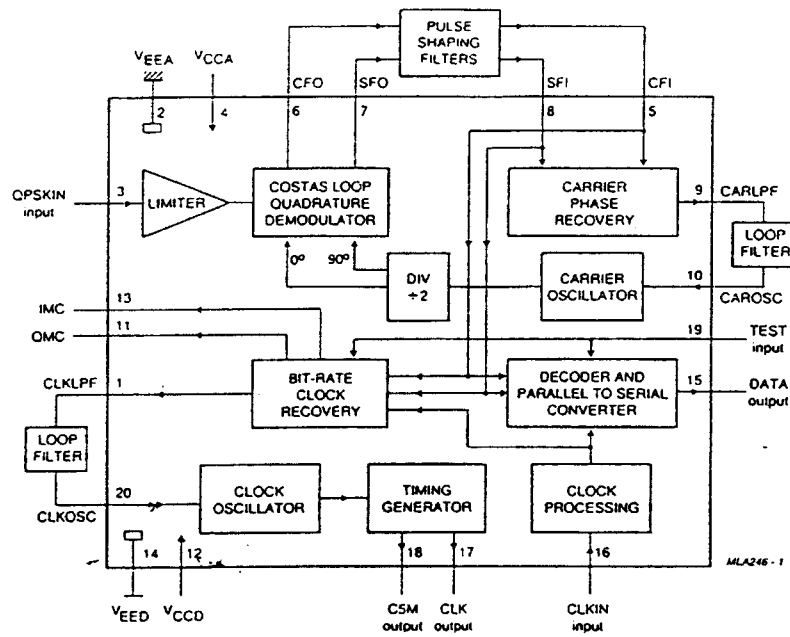


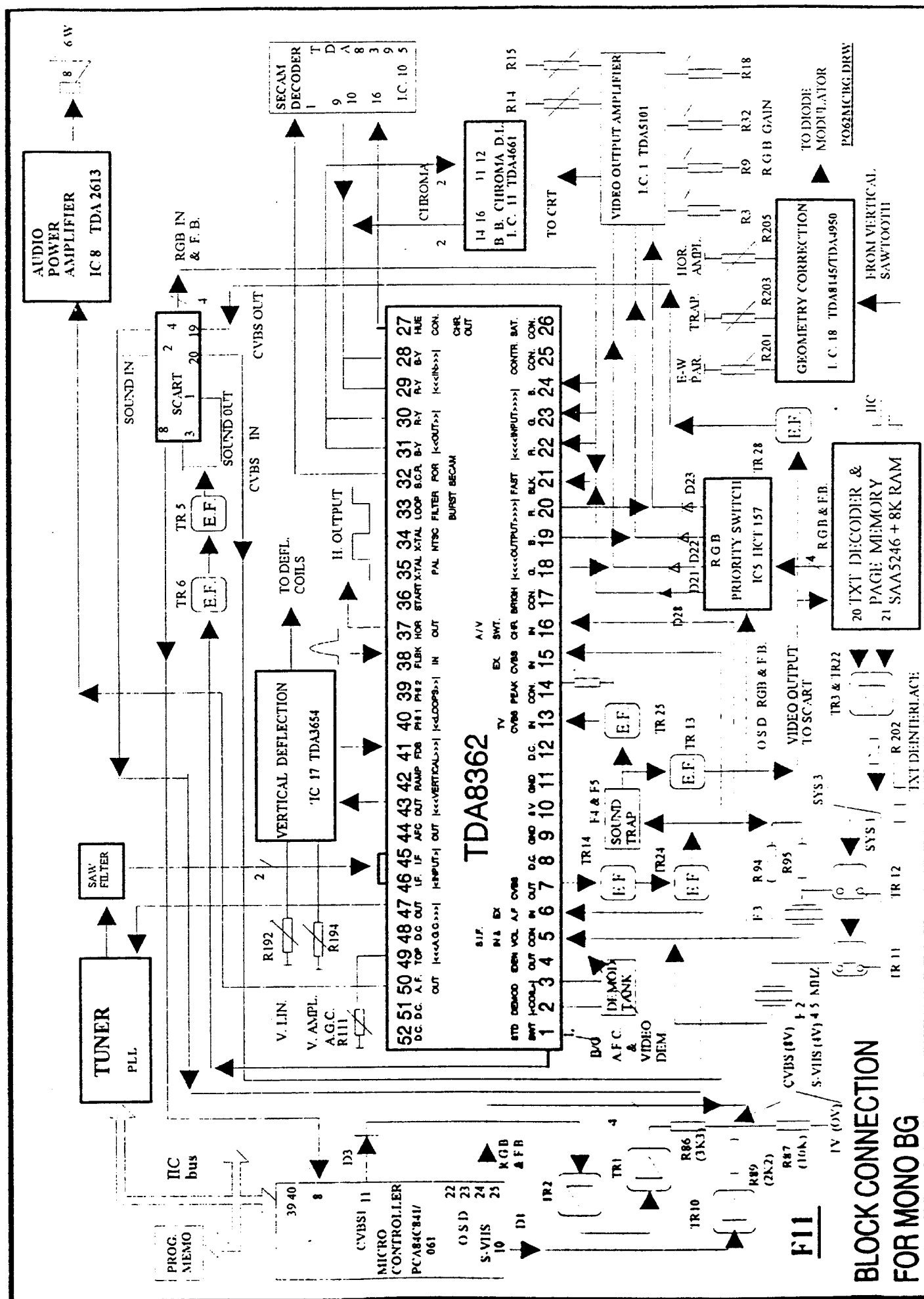
TOP VIEW

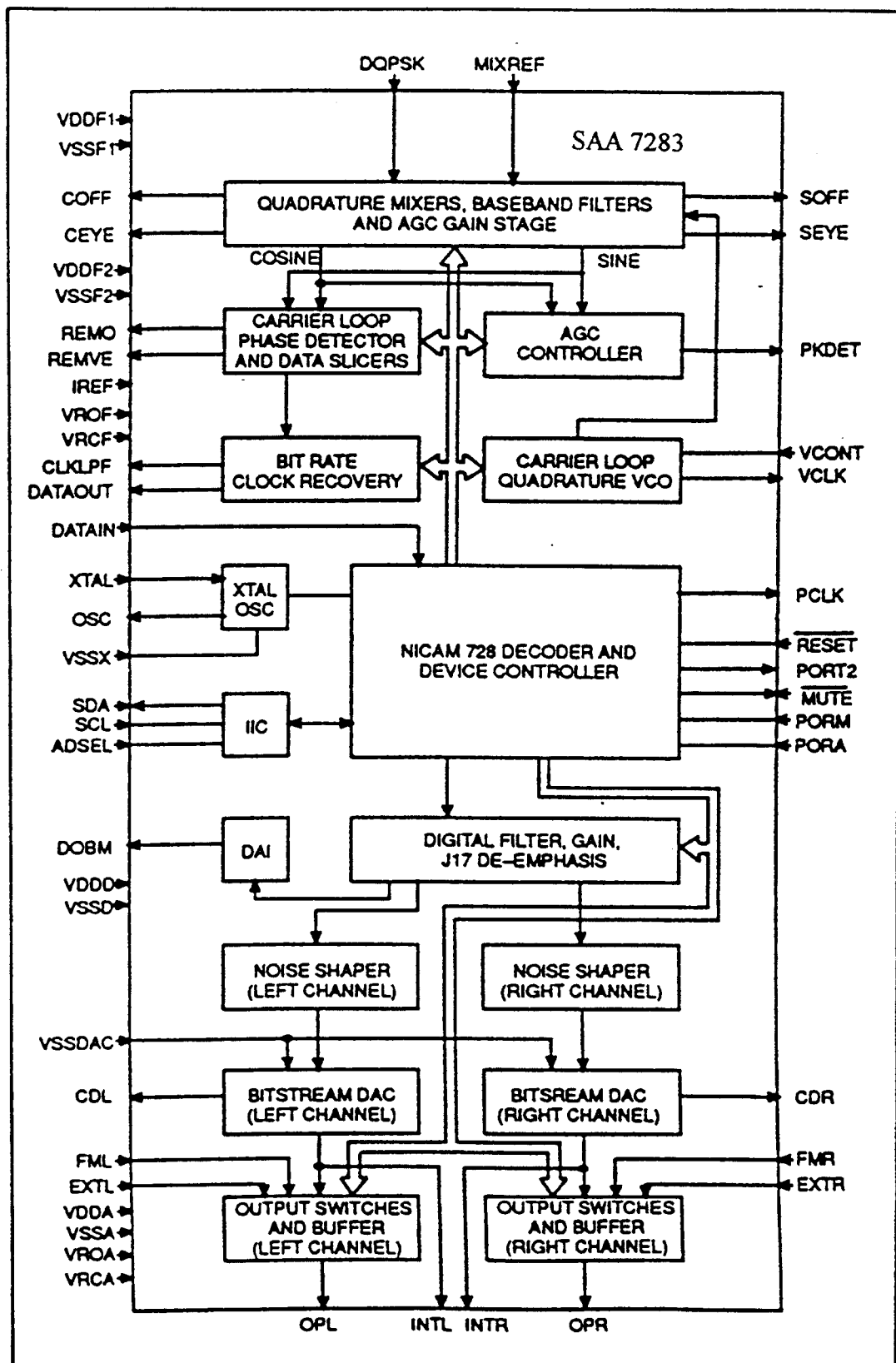
NOTE:
1. SCL and non-standard pinout.

NE5532N

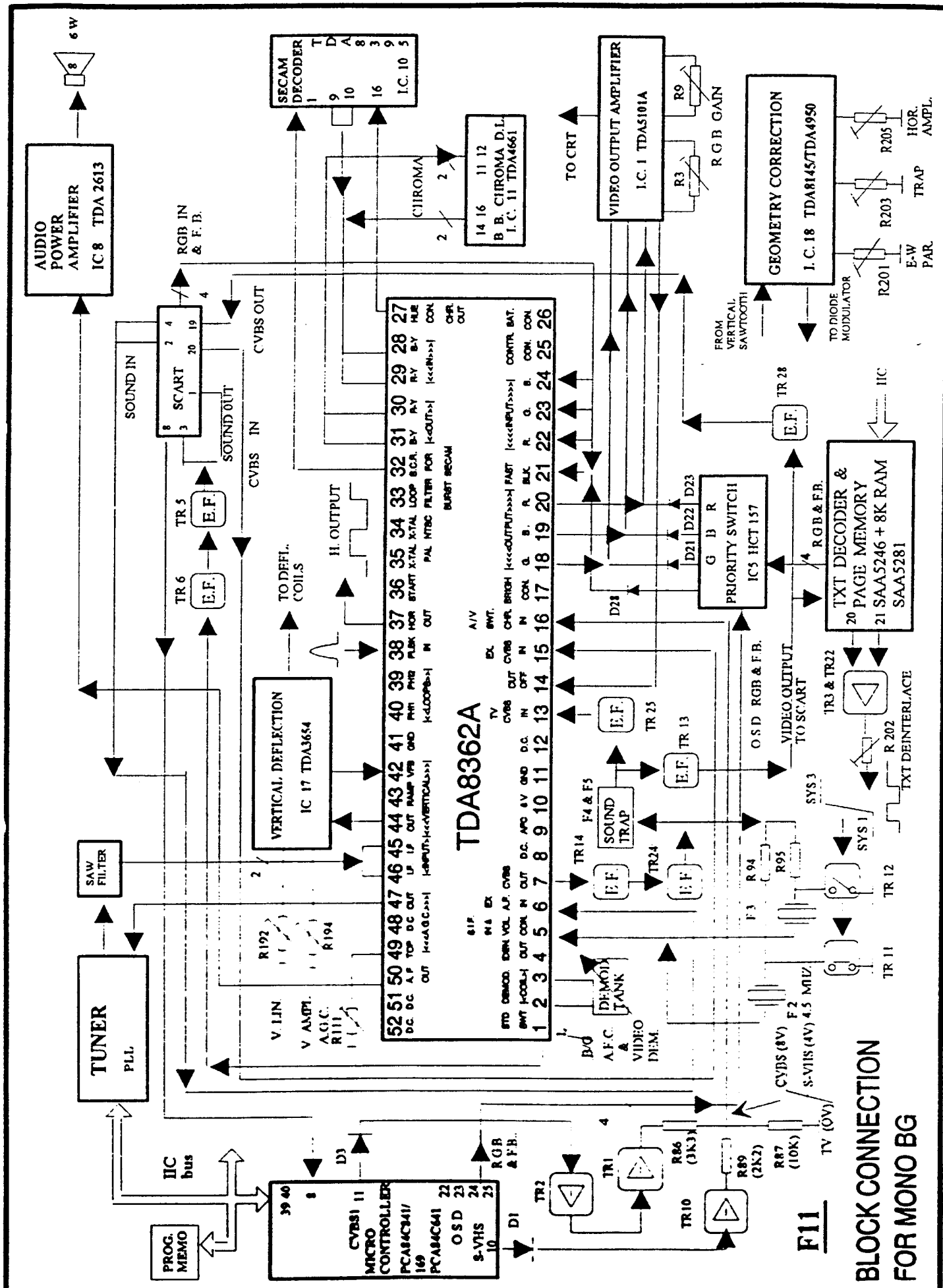
TDA8732





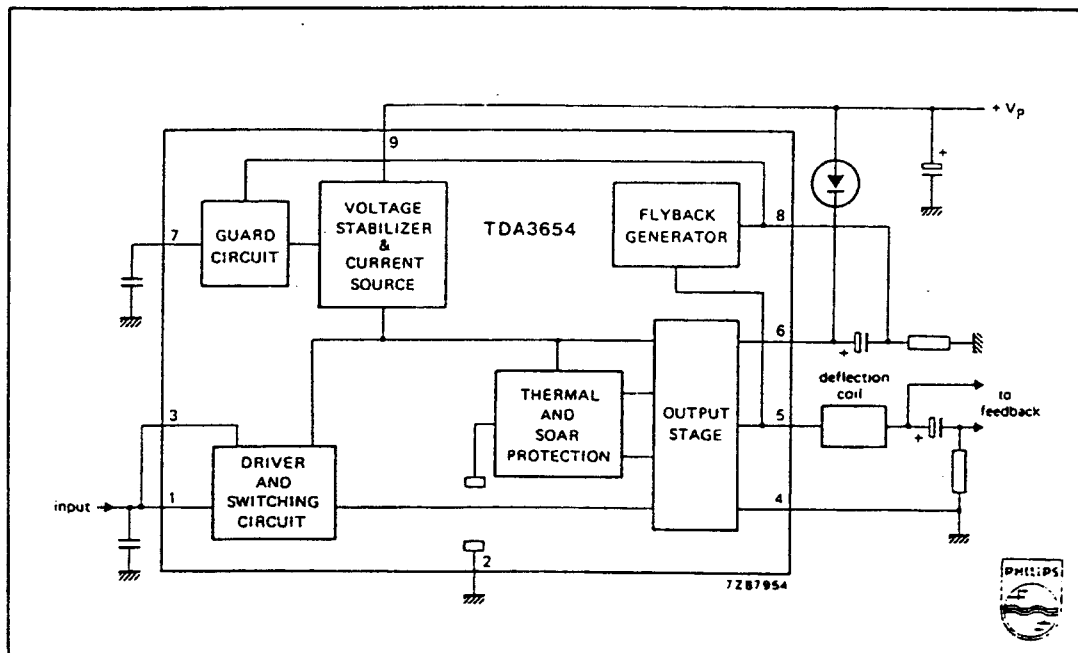






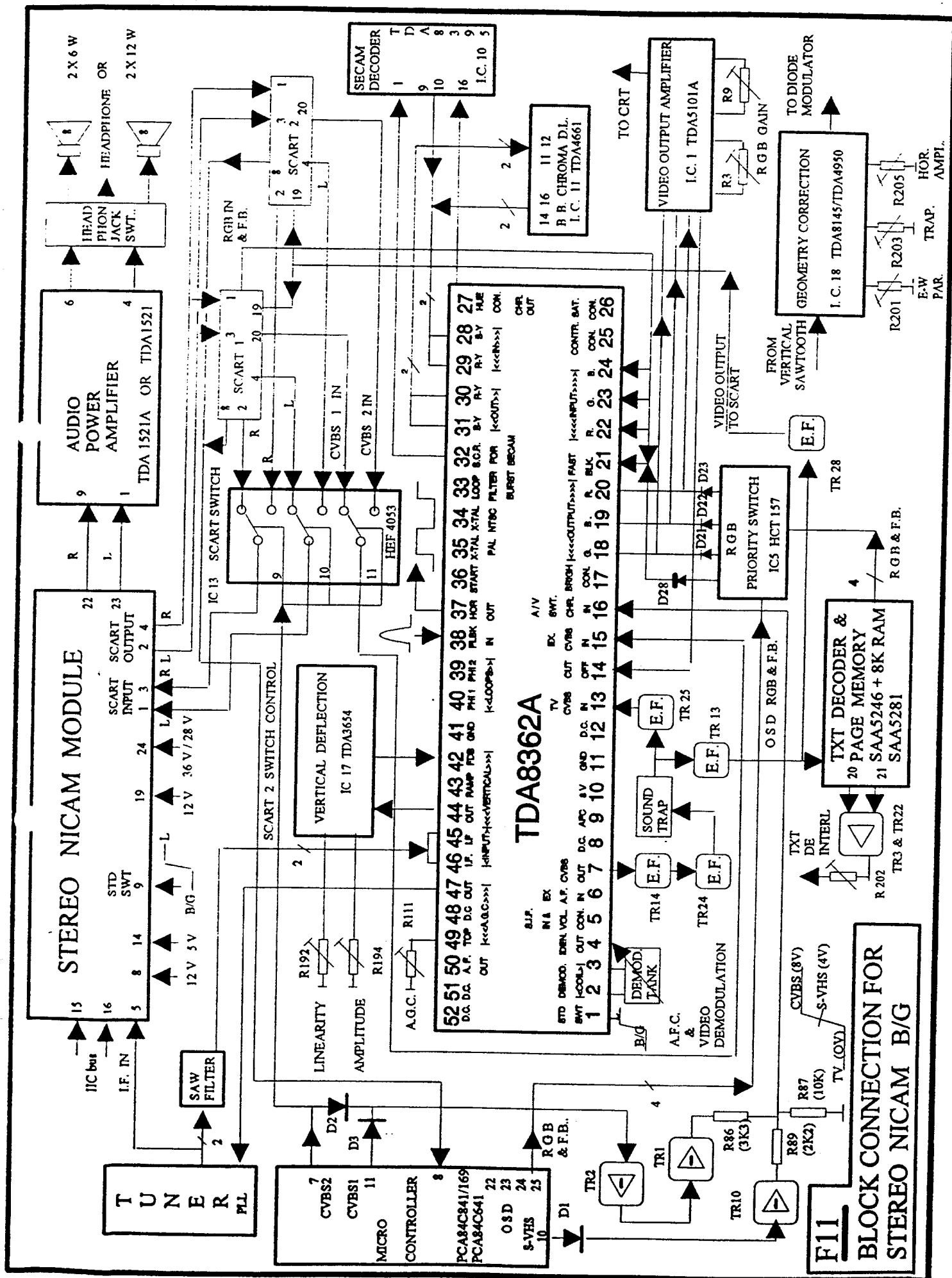
19a

VERTICAL DEFLECTION - TDA 3654



Functional description

TDA 3654 is a vertical deflection output circuit that drives a vertical deflection system with current up to about 3 A.

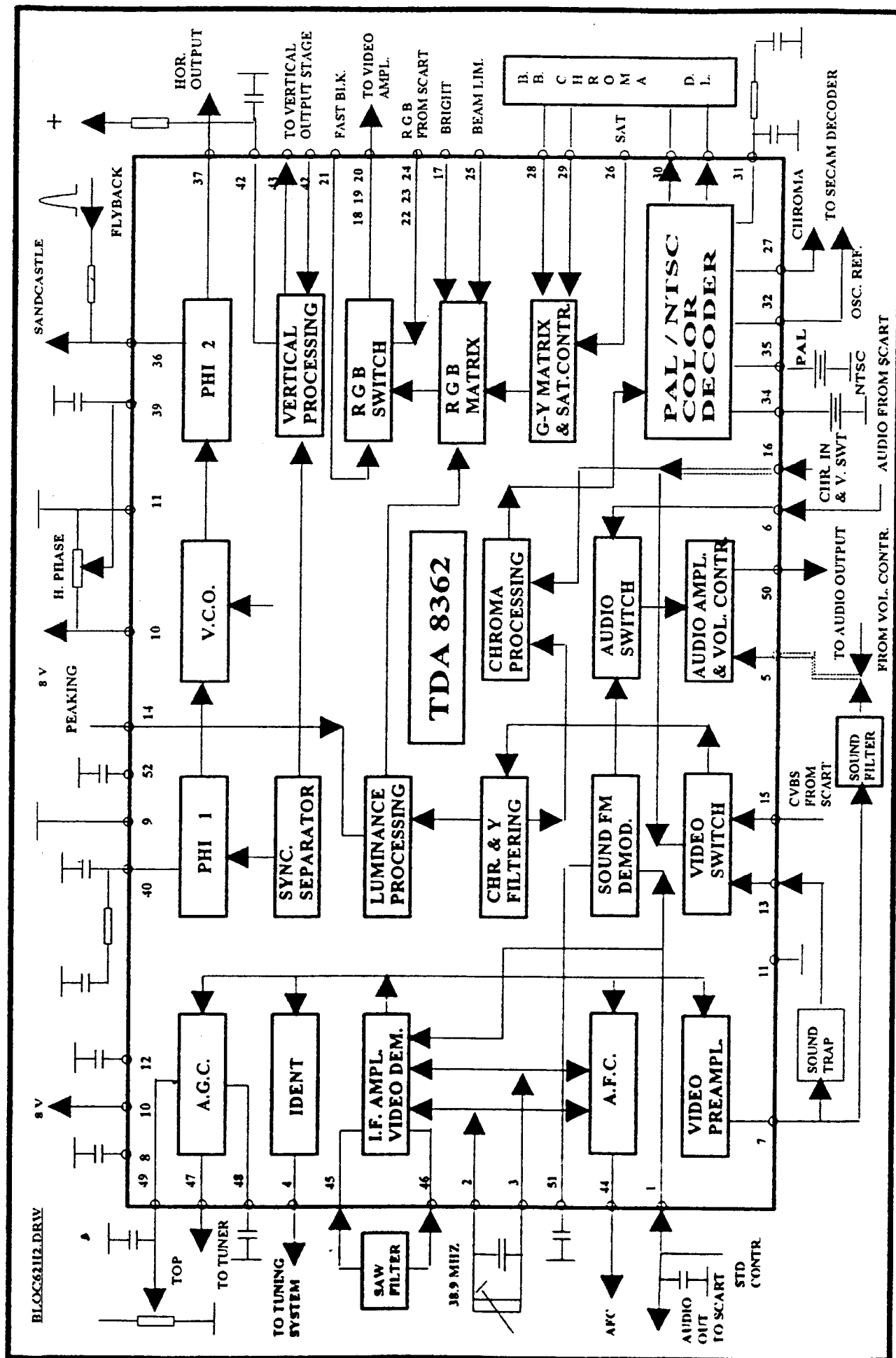


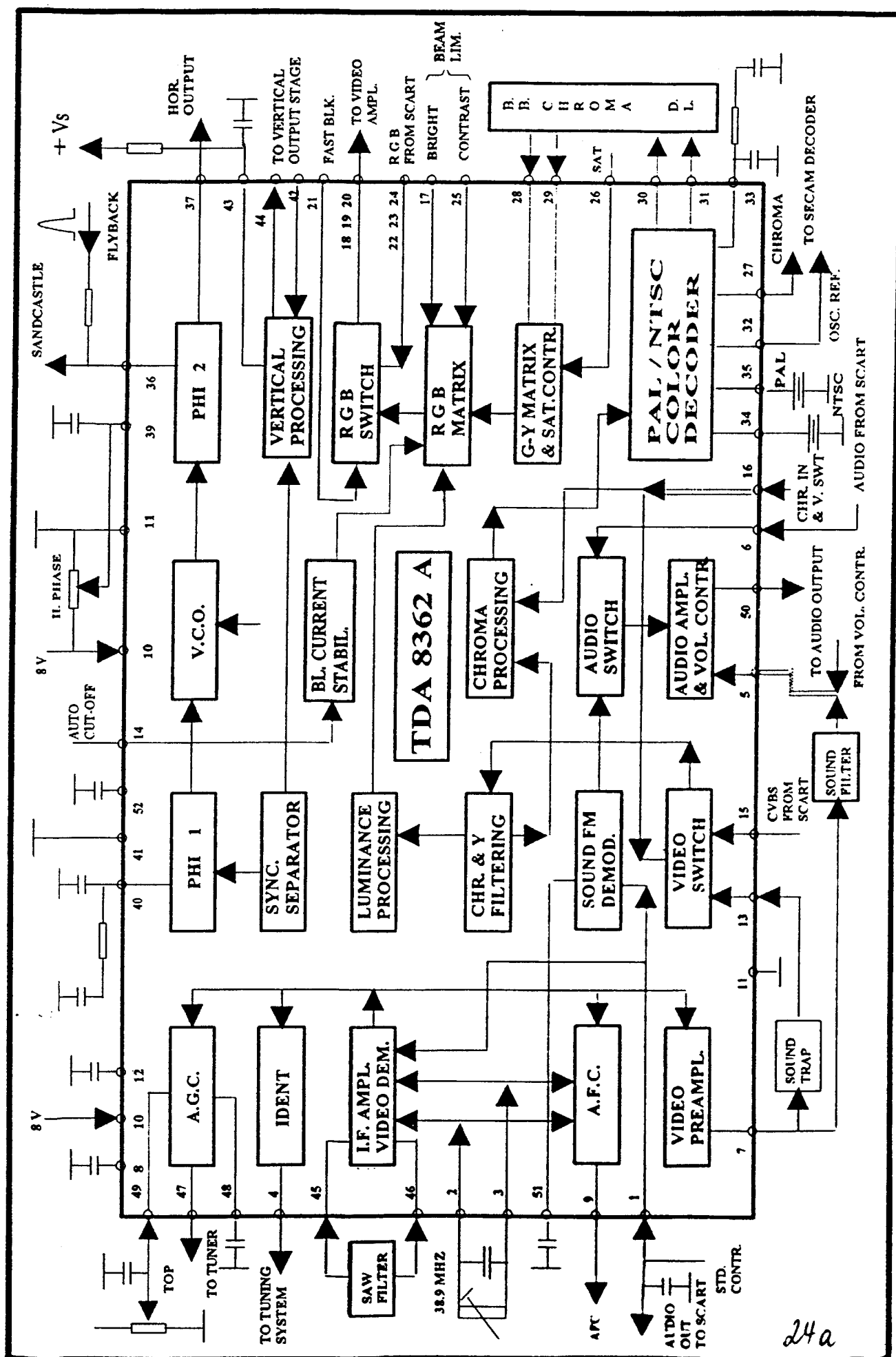
MONOCHIP - PIN DESCRIPTION FOR TDA 8362

- 1- de-emphasise + positive and negative modulation
- 2- demodulator input
- 3- demodulator input
- 4- identification output
- 5- IF sound input + volume control
- 6- external sound input
- 7- IF video output
- 8- digital section decoup.
- 9- ground
- 10- power supply
- 11- ground
- 12- tuning decoup.
- 13- video input
- 14- peaking
- 15- external video input
- 16- A/V input + chroma input
- 17- brightness
- 18- Blue output
- 19- Green output
- 20- Red output
- 21- fast blanking input
- 22- external Red input
- 23- external Green output
- 24- external Blue output
- 25- contrast
- 26- saturation
- 27- hue + chroma output
- 28- B-Y input
- 29- R-Y input
- 30- R-Y output
- 31- B-Y output
- 32- 4.43 MHz ref. output
- 33- phase detector
- 34- 3.58 MHz input
- 35- 4.43 MHz input
- 36- horizontal oscillator start
- 37- horizontal drive output
- 38- sandcastle/flyback output/input
- 39- if filter 2
- 40- if filter 1
- 41- vertical feedback input
- 42- vertical ramp generator
- 43- vertical drive output
- 44- AFC output
- 45- IF input
- 46- IF input
- 47- AGC output
- 48- AGC decoup.
- 49- AGC regulation
- 50- audio output
- 51- sound demod. decoup.
- 52- power-supply decoup.

Differences with respect to TDA 8361

- | | |
|--------|-------------------------------|
| pin 1 | solely audio de-emphasise |
| pin 27 | solely hue |
| pin 32 | 4.43 MHz output not connected |





Functional description of monochip TDA 8361/2

-IF Amplifier

The amplifier contains three differential stages with typical 60 dB dynamic control. The demodulator's polarity is suited for both positive and negative modulation in the TDA 8362 version (multi-standard PAL, SECAM, L L'), **and for only negative modulation in TDA 8361.**

The AFC circuit is driven by the same reference signal as the video demodulator. The AFC output voltage varies in the range 0--6V. . The circuit for identifying the presence of the signal in the transmission channel works independently of the synchronisation circuit : 0V. no identification and mute sound; 8V. identification and 4.43 MHz chroma frequency; 6V. identification and chroma frequency 3.58 MHz.

The AGC system controls the IF amplifier gain in such a way that the amplitude of the output video signal remains constant. The voltage of the AGC capacitors (pin 48) takes into account the IF amplification level. A second loop acts on the tuner to amplify the IF input. The amplification level is regulated by potentiometer R 111.

-Sound circuit

The inter-carrier signal is amplified/limited and demodulated by a PLL (phase locked loop). The PLL circuit automatically locks onto the incoming signal. The volume controls the amplitude of the composite audio signal (pin 5) . (700mV max).

-Horizontal and vertical synchronisation circuit

Upstream of the sync. separator there is an amplifier that raises the synchronism pulse to a fixed level. The separated synchronism pulses are forwarded to the phase and coincidence detectors. The coincidence detector is used to synchronise the line oscillator and to identify the transmission channel. The integrated circuit contains a start-up circuit for the horizontal output (pin 36). The driving pulses for the vertical are generated by a divided circuit. The components for the generation of the vertical ramp are connected to pin 42. The feedback voltage from the vertical amplification stage is connected to pin 41.

-Video filters

The integrated circuit contains a chroma trap and band-pass circuit. The filters are implemented by means of circuit with gyrators. The chroma trap is active when the chroma input pin (pin 16) is connected to ground or directly to the power supply. If pin 16 is held at intermediate voltage, the trap does not operate and therefore S-VHS application is possible. The luminance delay line and the delay for peaking circuit are implemented by means of circuit with gyrators.

-Colour decoder

The colour decoder contains a quartz-controlled oscillator, a killer circuit, and a colour difference demodulator. The 90° phase deviation is effected internally. The decoder adapts automatically to the PAL and NTSC system. For this purpose there are two pins 35 and 34. With TDA 8362, a PAL/SECAM/NTSC automatic multi-standard decoder may be built through the addition of the SECAM TDA 8395 decoder.

-RGB output circuit

The colour difference signals enter the matrices with the luminance signal to obtain the RGB signals. The integrated circuit handles the internal signals and those coming from outside (SCART connector). Brightness and contrast act both on the internal signals and the external ones. Pin 21 of the fast blanking has a second, 4V, threshold level. When this level is exceeded the RGB outputs are blocked and the OSD signals are sent directly to the output amplifier. The RGB signals have an amplitude of about 4V under nominal operating conditions.

Functional description of monochip TDA 8361/2A

-IF Amplifier

The amplifier contains three differential stages with typical 60 dB dynamic control. The demodulator's polarity is suited for both positive and negative modulation in the TDA 8362A version (multi-standard PAL, SECAM, L L'), **and for only negative modulation in TDA 8361A.**

The AFC circuit is driven by the same reference signal as the video demodulator. The AFC output voltage varies in the range 0--6V. The circuit for identifying the presence of the signal in the transmission channel works independently of the synchronisation circuit : 0V, no identification and mute sound; 8V, identification and 4.43 MHz chroma frequency; 6V, identification and chroma frequency 3.58 MHz.

The AGC system controls the IF amplifier gain in such a way that the amplitude of the output video signal remains constant. The voltage of the AGC capacitors (pin 48) takes into account the IF amplification level. A second loop acts on the tuner to amplify the IF input. The amplification level is regulated by potentiometer R 111.

-Sound circuit

The inter-carrier signal is amplified/limited and demodulated by a PLL (phase locked loop). The PLL circuit automatically locks onto the incoming signal. The volume controls the amplitude of the composite audio signal (pin 5) . (700mV max).

-Horizontal and vertical synchronisation circuit

Upstream of the sync. separator there is an amplifier that raises the synchronism pulse to a fixed level. The separated synchronism pulses are forwarded to the phase and coincidence detectors. The coincidence detector is used to synchronise the line oscillator and to identify the transmission channel. The integrated circuit contains a start-up circuit for the horizontal output (pin 36). The driving pulses for the vertical are generated by a divider circuit. The components for the generation of the vertical ramp are connected to pin 43. The feedback voltage from the vertical amplification stage is connected to pin 42.

-Video filters

The integrated circuit contains a chroma trap and band-pass circuit. The filters are implemented by means of circuit with gyrators. The chroma trap is active when the chroma input pin (pin 16) is connected to ground or directly to the power supply. If pin 16 is held at intermediate voltage, the trap does not operate and therefore S-VHS application is possible. The luminance delay line is implemented by means of circuit with gyrators.

-Colour decoder

The colour decoder contains a quartz-controlled oscillator, a killer circuit, and a colour difference demodulator. The 90° phase deviation is effected internally. The decoder adapts automatically to the PAL and NTSC system. For this purpose there are two pins 35 and 34. With TDA 8362A, a PAL/SECAM/NTSC automatic multi-standard decoder may be built through the addition of the SECAM TDA 8395 decoder.

-RGB output circuit

The colour difference signals enter the matrices with the luminance signal to obtain the RGB signals. The integrated circuit handles the internal signals and those coming from outside (SCART connector). Brightness and contrast act both on the internal signals and the external ones. Pin 21 of the fast blanking has a second, 4V, threshold level. When this level is exceeded the RGB outputs are blocked and the OSD signals are sent directly to the output amplifier. The RGB signals have an amplitude of about 4V under nominal operating conditions.

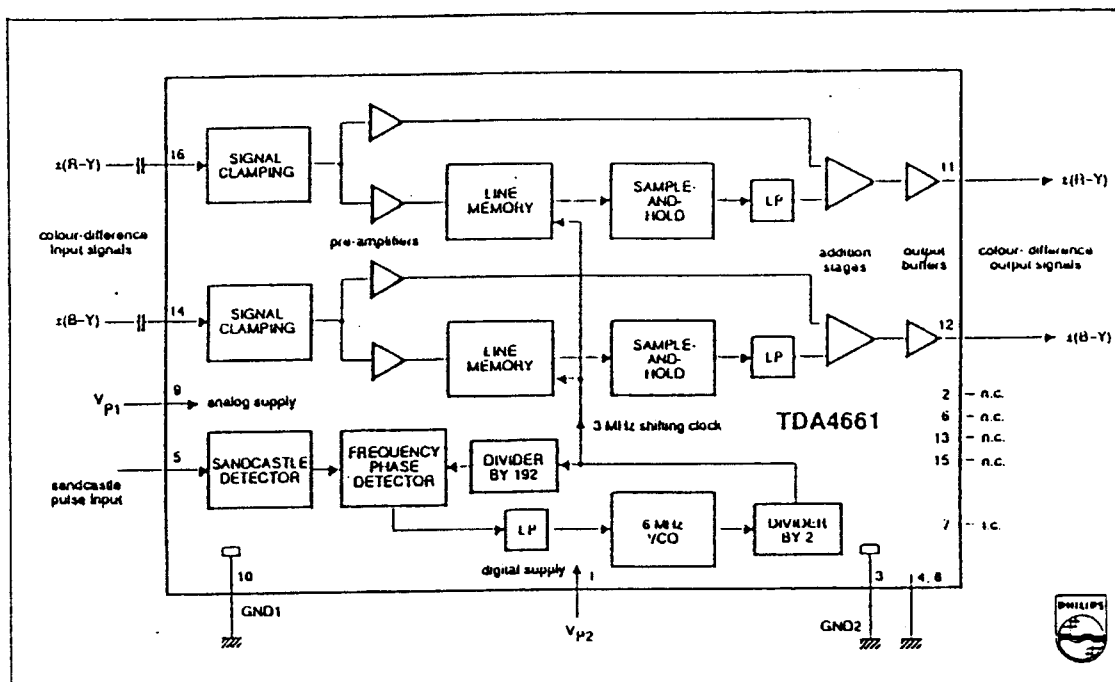
MONOCHIP - PIN DESCRIPTION FOR TDA 8362A

- 1- Audio deemphasis and +/- mod. switch
- 2- IF-demodulator tuned circuit
- 3- IF-demodulator tuned circuit
- 4- Video identification output
- 5- Sound IF in plus volume control
- 6- External audio input
- 7- IF video output
- 8- Decoupling digital supply
- 9- AFC output
- 10- Positive supply (8 V)
- 11- Ground
- 12- Decoupling filter tuning
- 13- Internal CVBS input
- 14- Black-current input
- 15- External CVBS input
- 16- Chroma + A/V switch input
- 17- Brightness control input
- 18- B-output
- 19- G-output
- 20- R-output
- 21- RGB-insertion and blanking input
- 22- R-input for insertion
- 23- G-input for insertion
- 24- B-input for insertion
- 25- Contrast control input
- 26- Saturation control input
- 27- Hue control input (or chroma out)
- 28- B - Y input signal
- 29- R - Y input signal
- 30- R - Y output signal
- 31- B - Y output signal
- 32- 4.43 Mhz output for TDA 8395
- 33- Loop filter burst phase detector
- 34- 3.58 Mhz X-tal connection
- 35- 4.43 Mhz X-tal connection
- 36- Start horizontal oscillator
- 37- Horizontal output
- 38- Flyback input / sandcastle output
- 39- Phi - 2 loop filter
- 40- Phi - 1 loop filter
- 41- Ground
- 42- Vertical feedback input
- 43- Vertical ramp generator
- 44- Vertical output
- 45- IF-input
- 46- IF-input
- 47- Tuner AGC output
- 48- AGC decoupling capacitor
- 49- Tuner take-over adjustment
- 50- Audio output
- 51- Decoupling sound demodulator
- 52- Decoupling bandgap supply

The TDA 8361A has the following differences :

- Pin 1 Only audio deemphasis
- Pin 27 Only hue control
- Pin 32 4.43 Mhz output for the TDA8395 not connected

DELAY LINE - TDA 4661



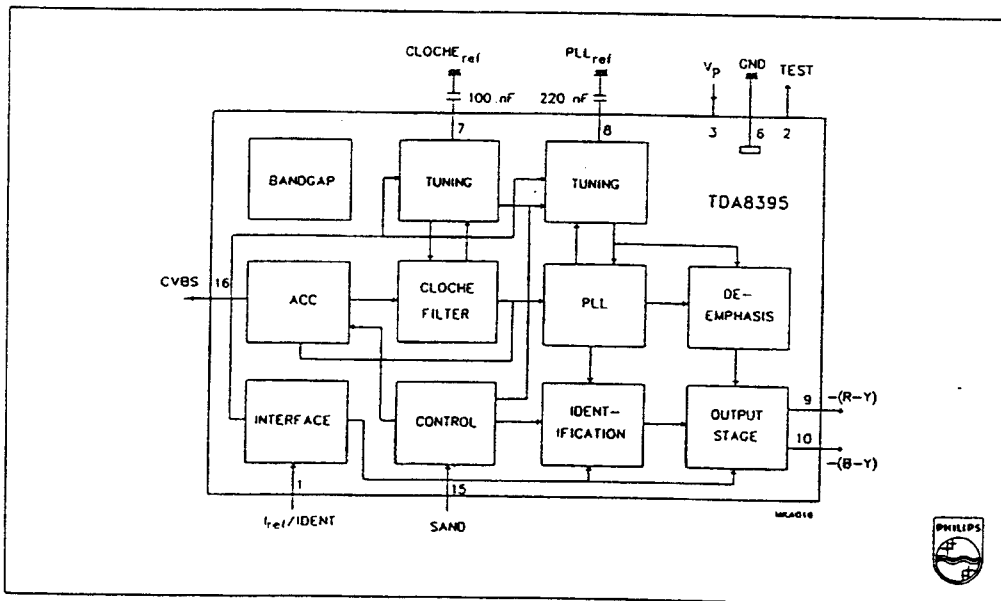
Pinout description

- 1- digital section +5V power supply
- 2- not connected
- 3- digital section ground
- 4- internally connected
- 5- sandcastle input
- 6- not connected
- 7- internally connected
- 8- internally connected
- 9- analog section +5V power supply
- 10- analog section ground
- 11- (R-Y) signal output
- 12- (B-Y) signal output
- 13- not connected
- 14- (B-Y) signal input
- 15- not connected
- 16- (R-Y) signal input

Functional description

The integrated circuit TDA 4661 is a delay line in integrated baseband. It interfaces with decoders with colour difference output signals (R-Y) and (B-Y).

SECAM DECODER - TDA 8395



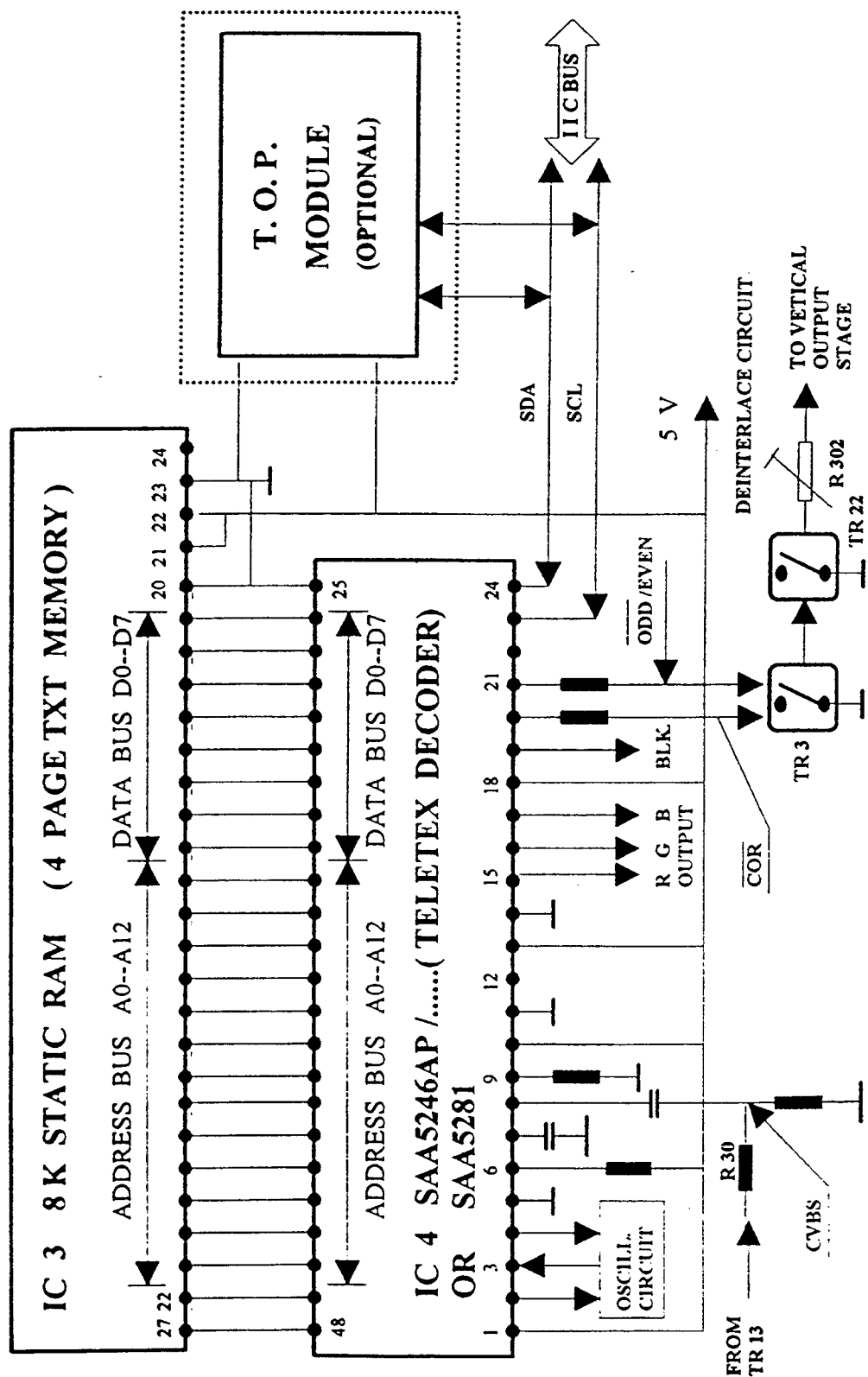
Pin description TDA 8395

- 1- identification input
- 2- test
- 3- power supply
- 4- n.c.
- 5- n.c.
- 6- ground
- 7- cloche filter reference
- 8- PLL reference
- 9- -(R-Y) output
- 10- -(B-Y) output
- 11- n.c.
- 12- n.c.
- 13- n.c.
- 14- n.c.
- 15- sandcastle input
- 16- video input

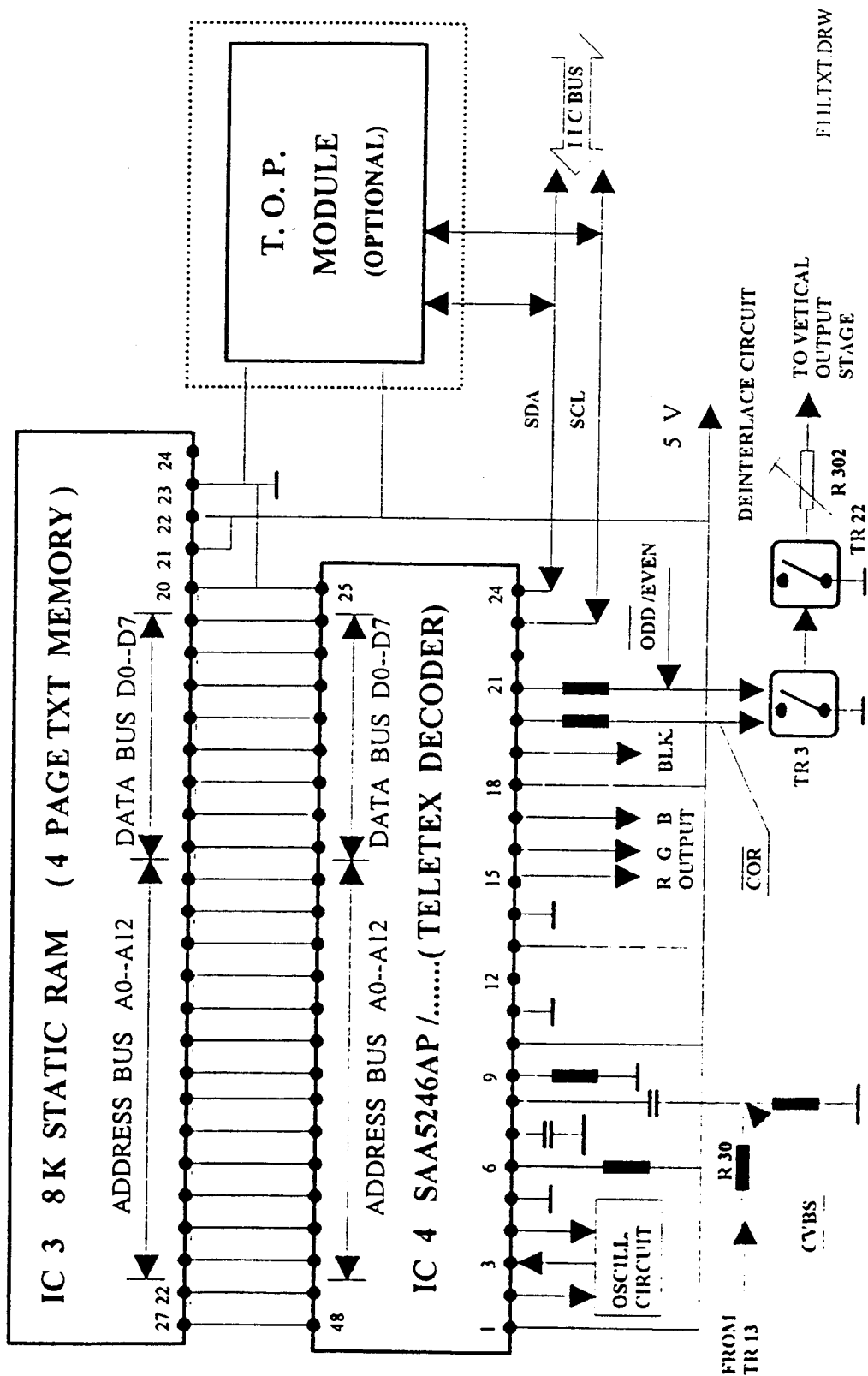
Functional description

TDA 8395 is a completely integrated SECAM decoder. The integrated circuit incorporates HF and LF filters, a demodulator, and an identification circuit. No regulation is necessary. Requirements include a stable reference frequency for calibration and a sandcastle two-level pulse for the blanking and burst gating functions.

F 11 TELETEXT DECODER & TOP MODULE (OPTION)



F11 TELETEXT DECODER & TOP MODULE (OPTION)



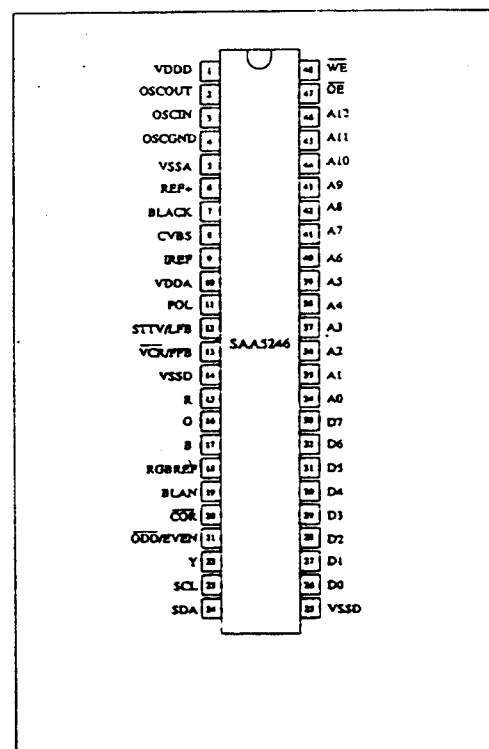
F11LTX.DRW

Pin description for TELETEXT SAA 5246AP/..

- 1 - power supply
- 2 - oscillator output
- 3 - oscillator input
- 4 - oscillator ground
- 5 - analogic ground
- 6 - ADC reference voltage
- 7 - black level reference input
- 8 - composite video input
- 9 - current reference input
- 10 - power supply analogic
- 11 - polarity section
- 12 - sync input/output
- 13 - PLL time-contrast input
- 14 - ground
- 15 - Red output
- 16 - Green output
- 17 - Blue output
- 18 - DC voltage level on RGB
- 19 - Fast blanking output
- 20 - contrast-reduction programmable output
- 21 - de-interlace output
- 22 - Y out
- 23 - i2c bus
- 24 - i2c bus
- 25 - ground
- 26 - D0
- 27 - D1
- 28 - D2
- 29 - D3
- 30 - D4
- 31 - D5
- 32 - D6
- 33 - D7
- 34 - A0
- 35 - A1
- 36 - A2
- 37 - A3
- 38 - A4
- 39 - A5
- 40 - A6
- 41 - A7
- 42 - A8
- 43 - A9
- 44 - A10
- 45 - A11
- 46 - A12
- 47 - output enable
- 48 - write enable

RAM DATA

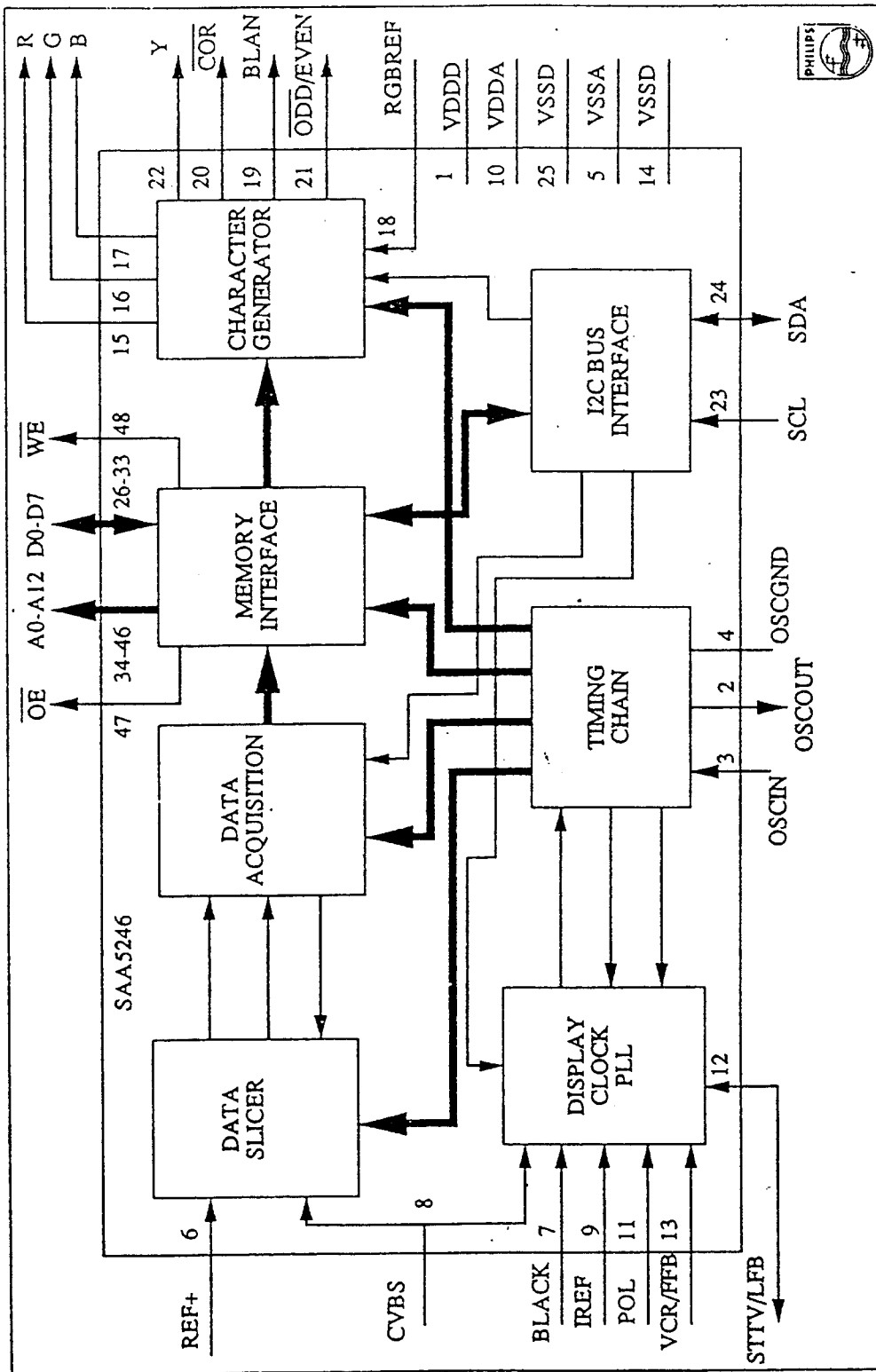
RAM ADDRESS



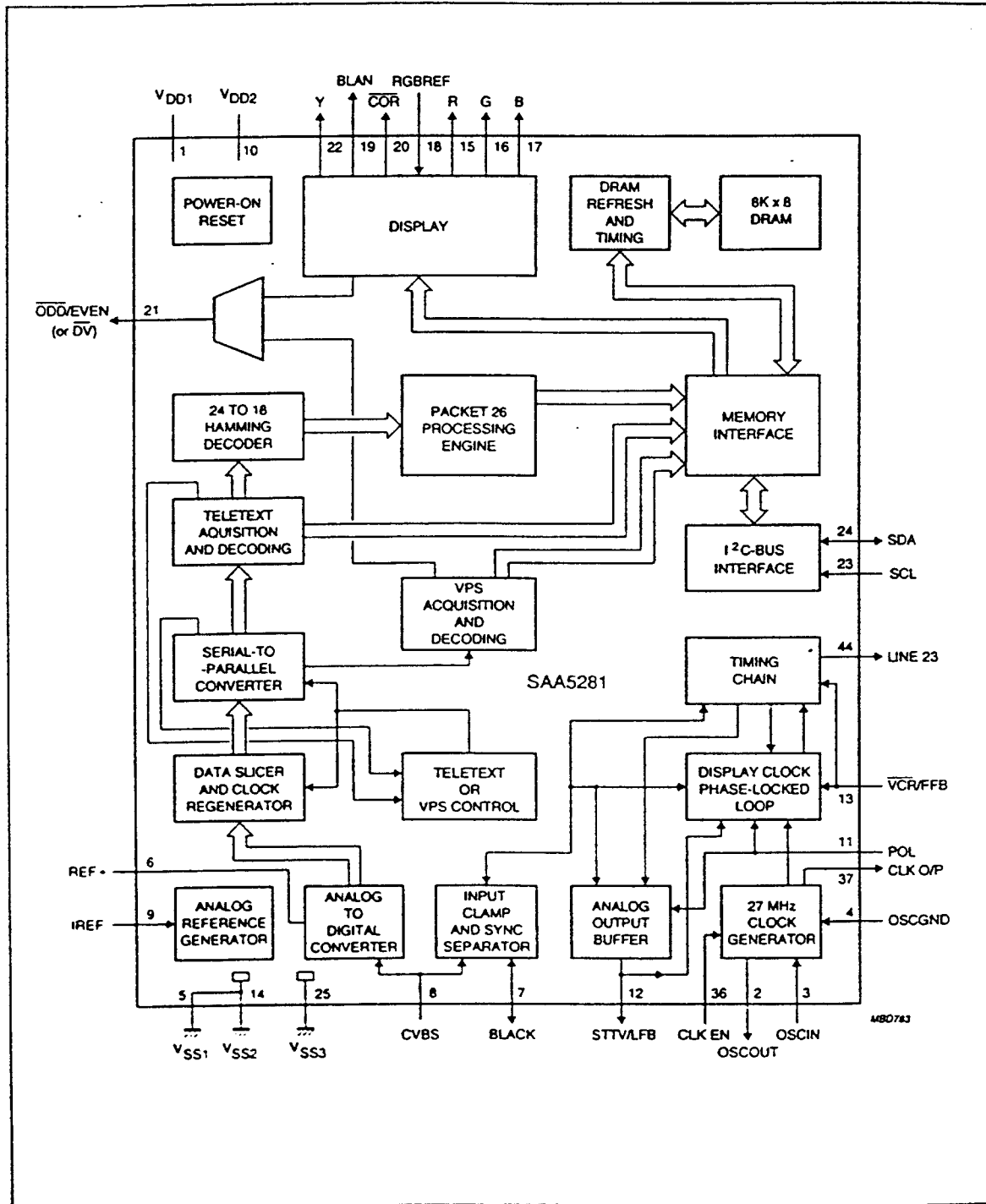
Functional description

The integrate circuit SAA 5246 is a teletext decoder with 4 page memory with separated RAM.

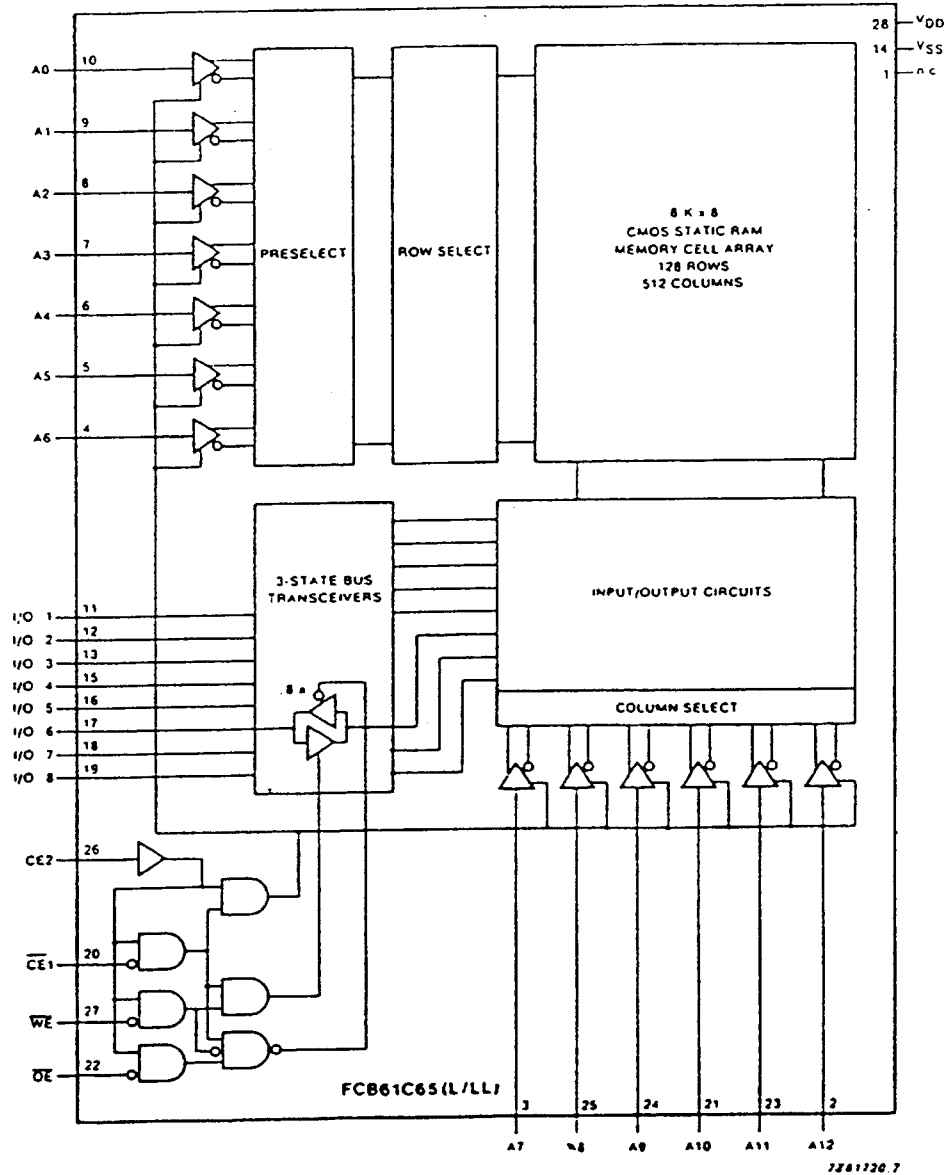
TELETEXT - SAA 5246AP



TELETEXT - SAA 5281



RAM - FCB 61C65

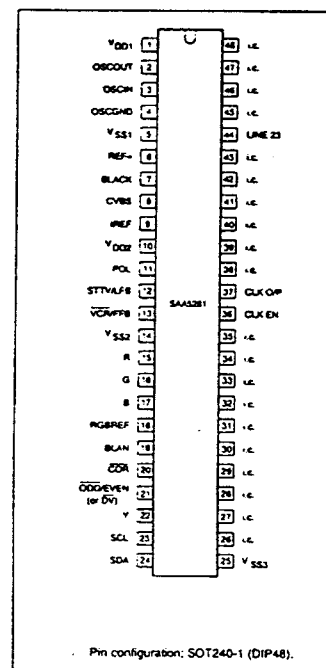


F:\IIDEF.DRW



TELETEXT SAA 5281 pinout description

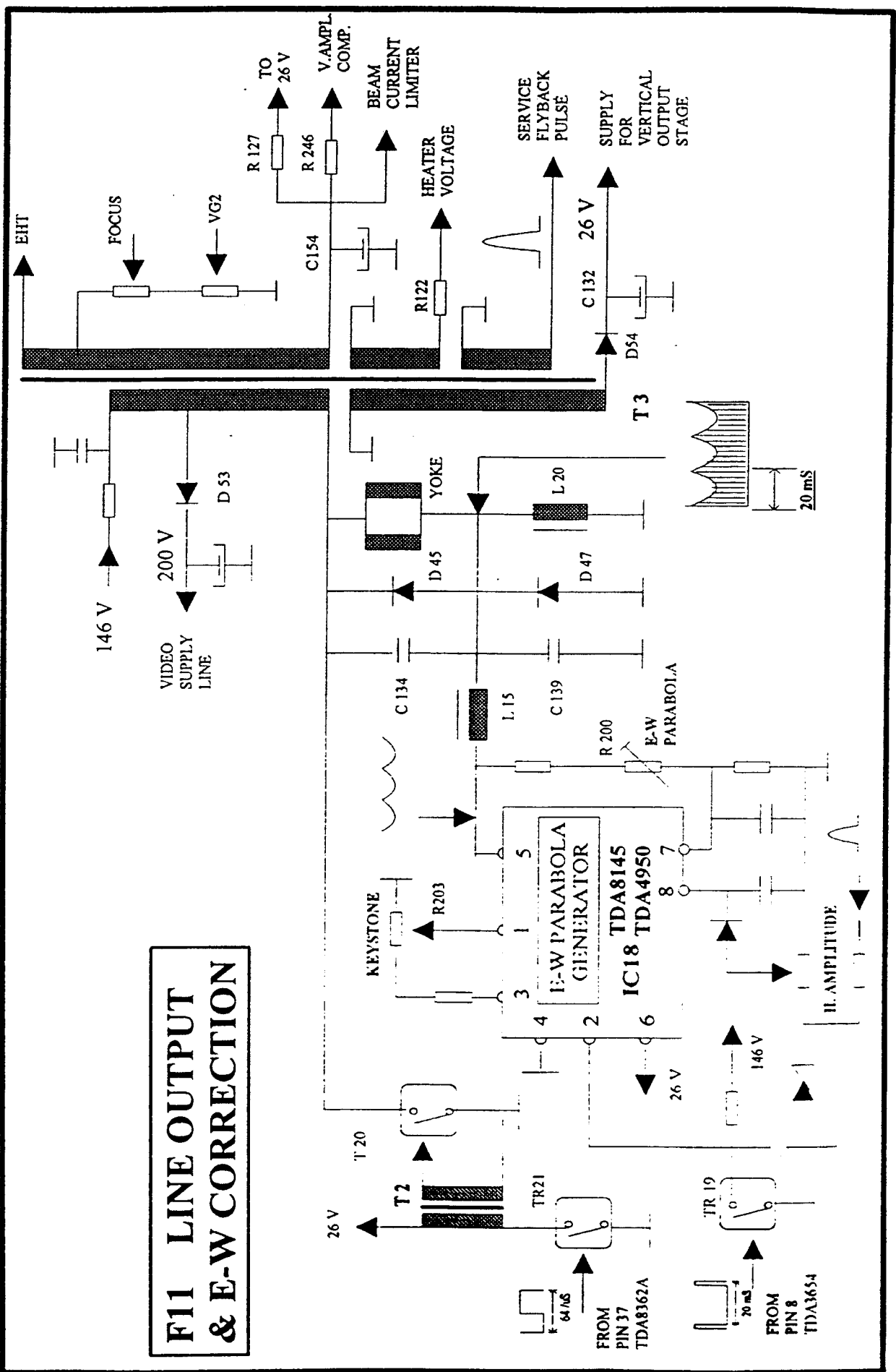
- 1- Power supply
- 2- 27 Mhz oscillator output
- 3- 27 Mhz oscillator input
- 4- Oscillator ground
- 5- Analogic ground
- 6- ADC reference voltage
- 7- Black level reference input
- 8- Composite video input
- 9- Current reference input
- 10- Power supply analogic
- 11- Polarity selection
- 12- Sync input/output
- 13- PLL time-constant input
- 14- Ground
- 15- Red output
- 16- Green output
- 17- Blue output
- 18- DC voltage level on RGB
- 19- Fast blanking output
- 20- Contrast-reduction programmable output
- 21- De-interlace output
- 22- Y out
- 23- i2c bus
- 24- i2c bus
- 25- Ground
- 26- i.c.
- 27- i.c.
- 28- i.c.
- 29- i.c.
- 30- i.c.
- 31- i.c.
- 32- i.c.
- 33- i.c.
- 34- i.c.
- 35- i.c.
- 36- Clk en
- 37- Clk o/p
- 38- i.c.
- 39- i.c.
- 40- i.c.
- 41- i.c.
- 42- i.c.
- 43- i.c.
- 44- Line 23
- 45- i.c.
- 46- i.c.
- 47- i.c.
- 48- i.c.



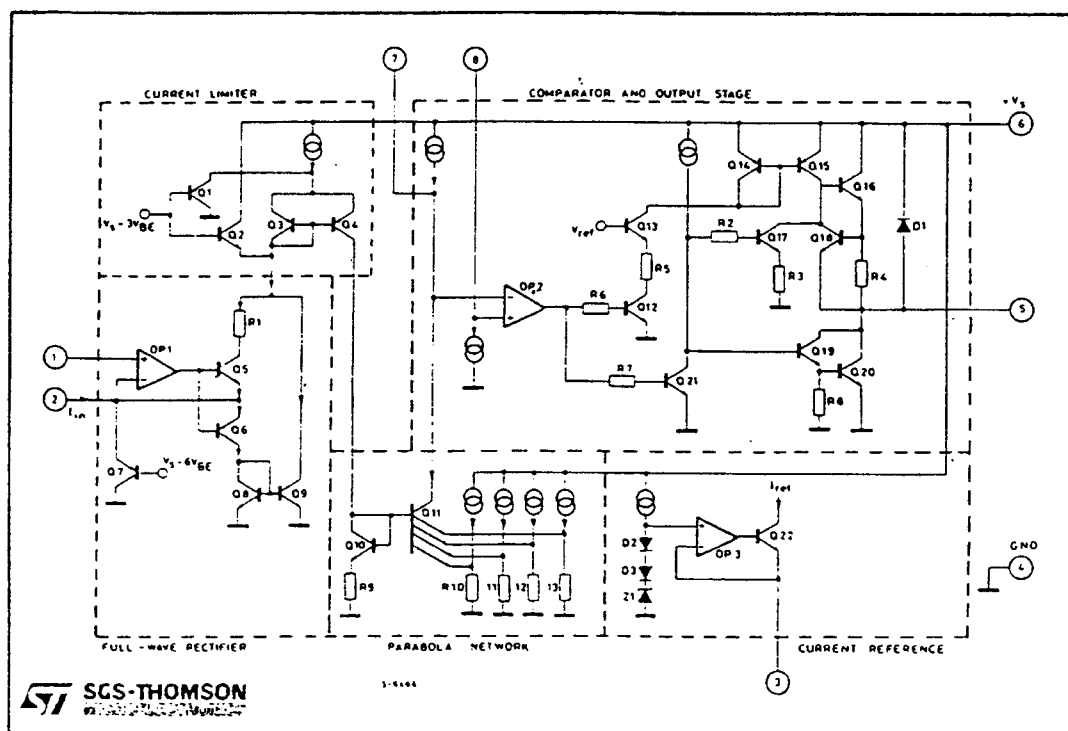
Functional description

The integrate circuit SAA 5281 is a teletext decoder with 4 page memory.

F11 LINE OUTPUT & E-W CORRECTION

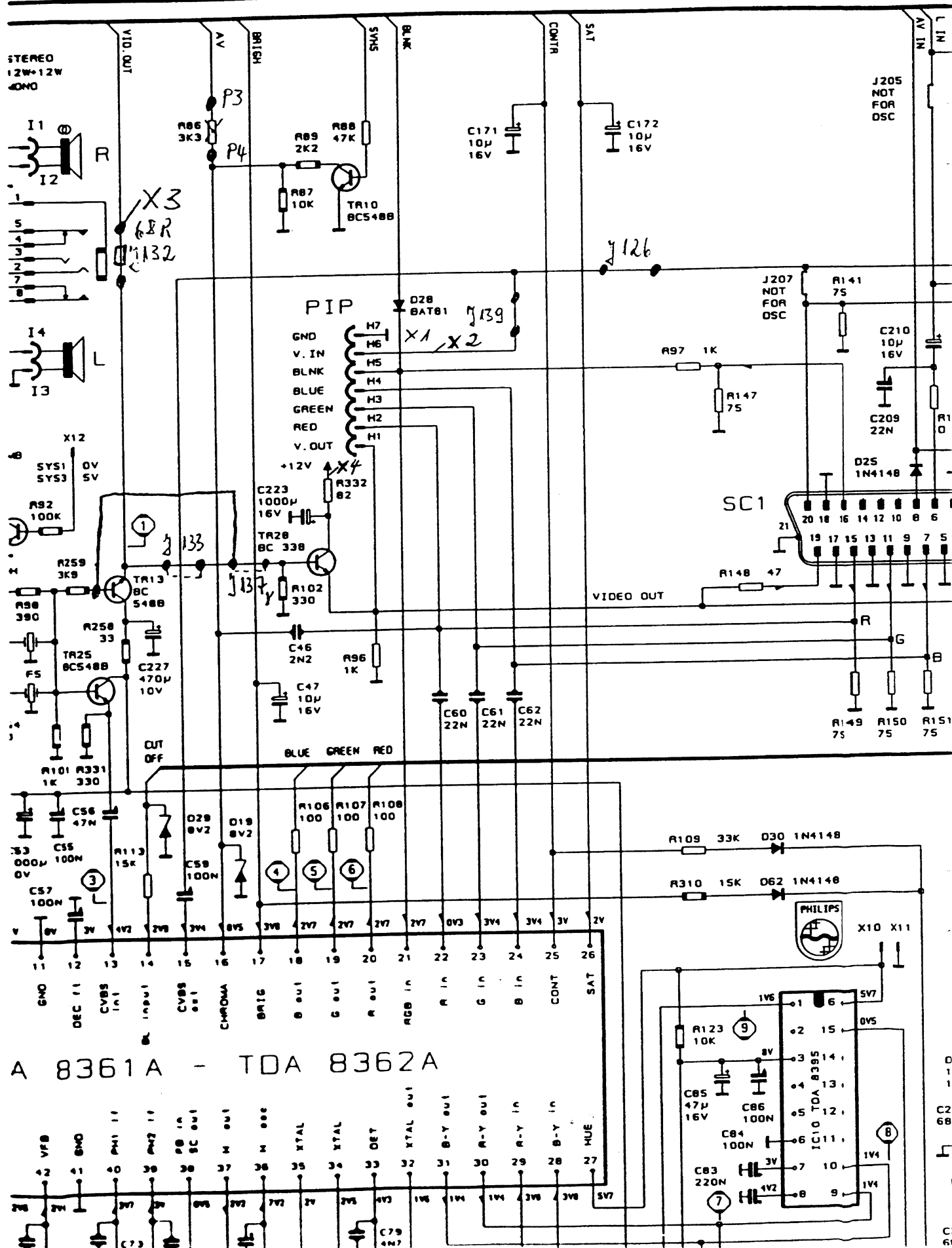


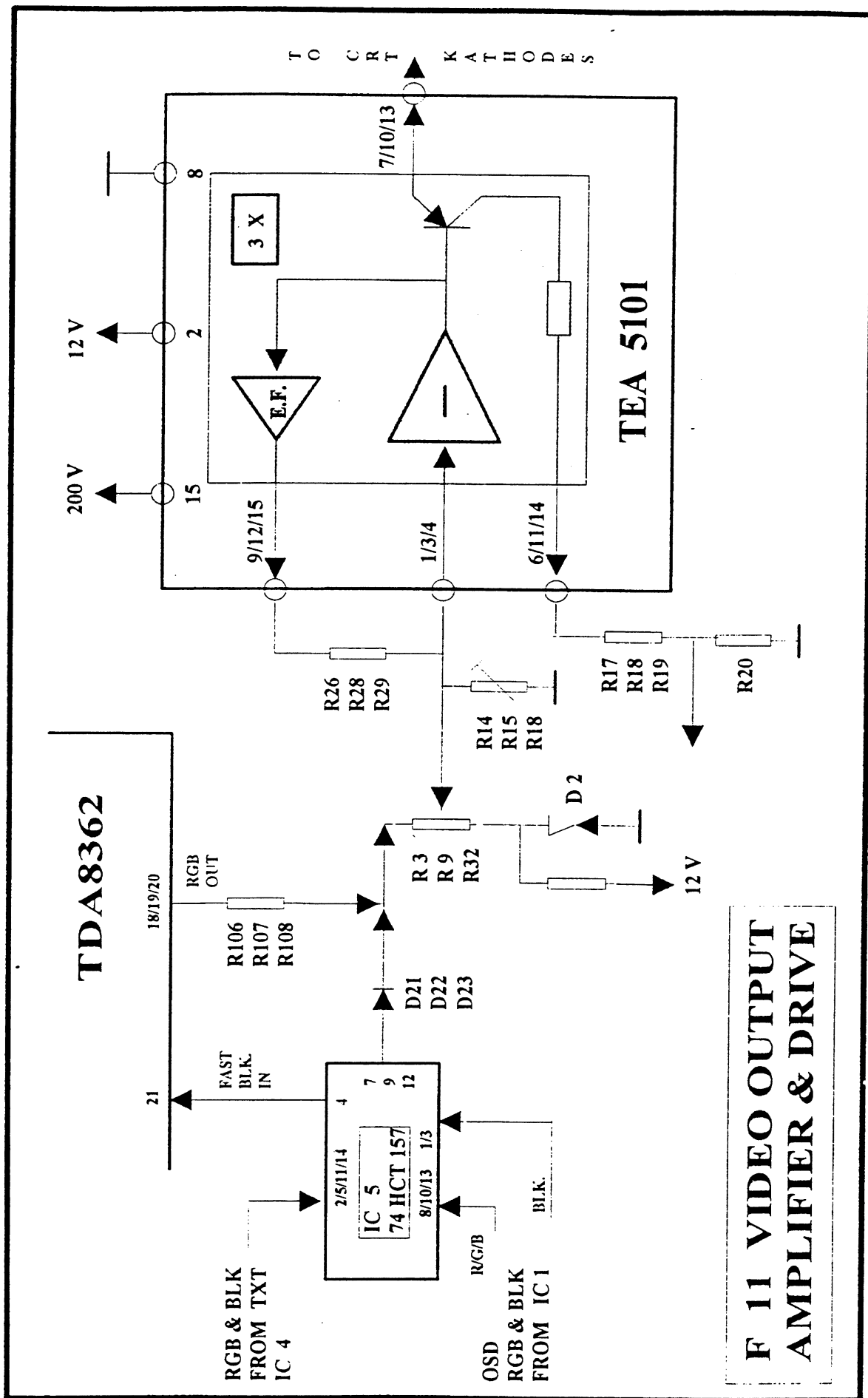
DIODE MODULATOR - TDA 4950 / TDA 8145



PINNING

- 1- keystone correction input
- 2- frame sawtooth current input
- 3- current reference
- 4- ground
- 5- output
- 6- power supply
- 7- parabola output/inverting input
- 8- non-inverting input



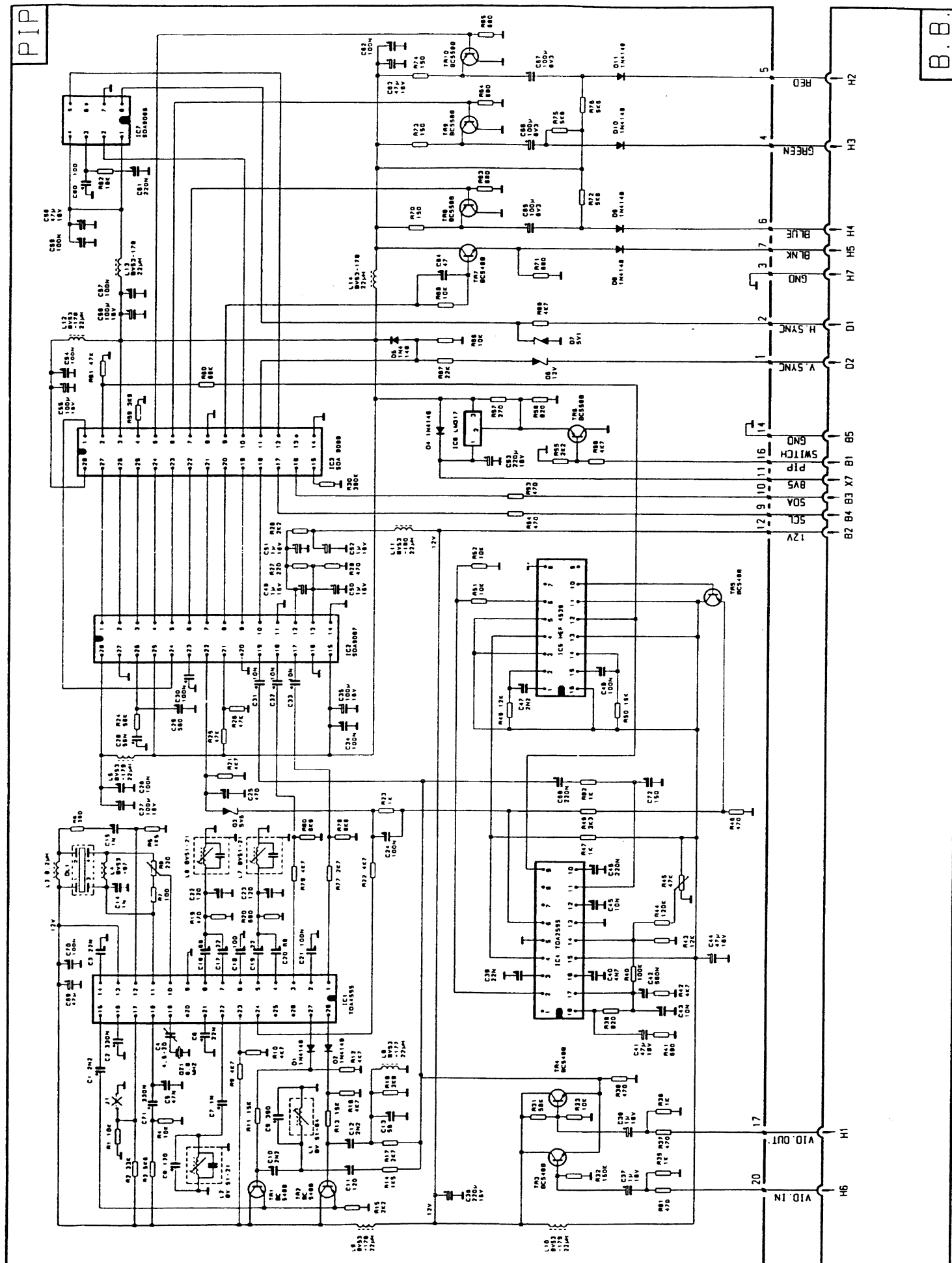


Pal/Secam Version

88.65.5036900

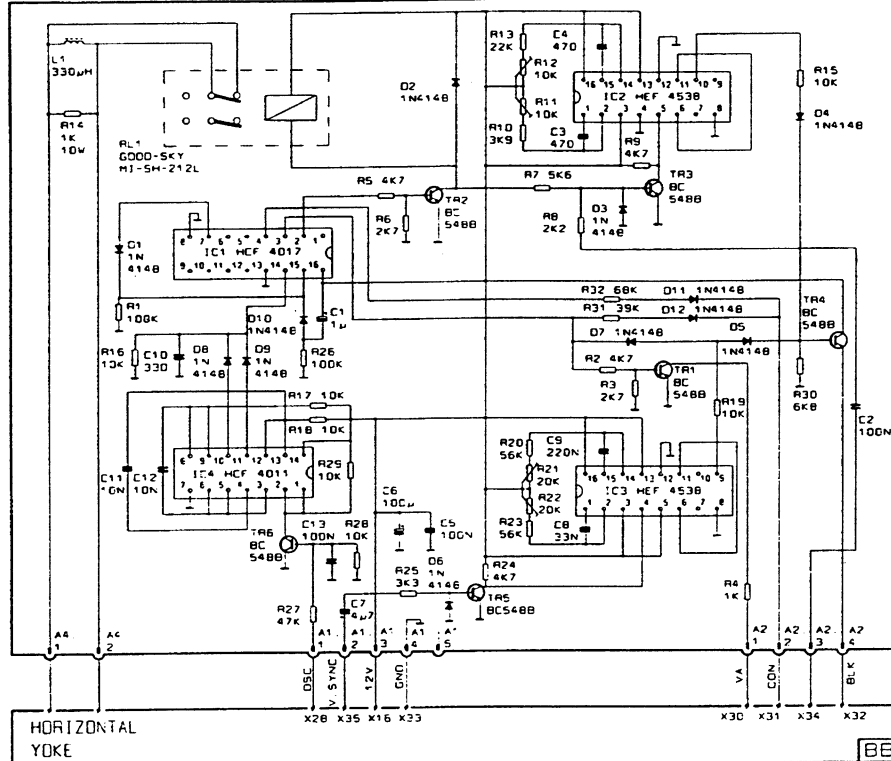
PIP

88

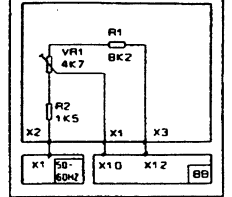


88.65.5038200

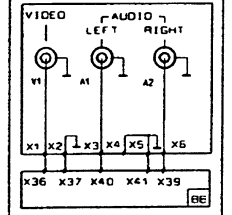
SWITCH MODULE 4:3, 16:9



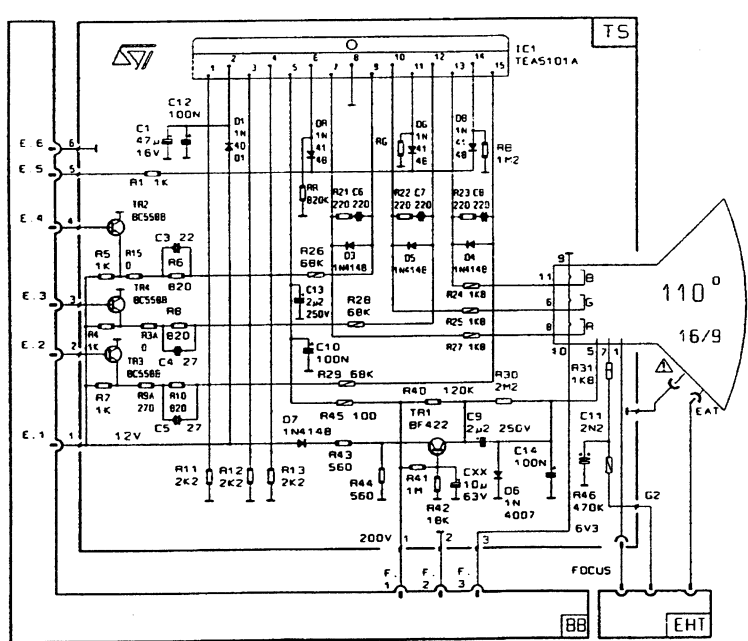
HUE - 16:9



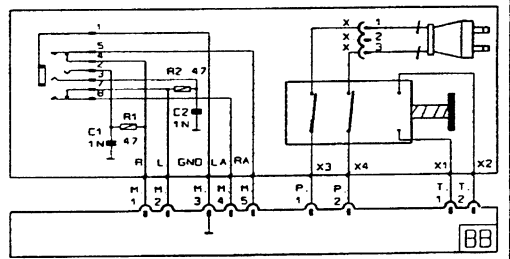
A/V IN - 16:9



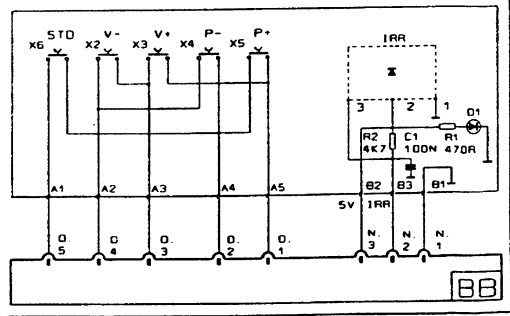
RGB - 16:9



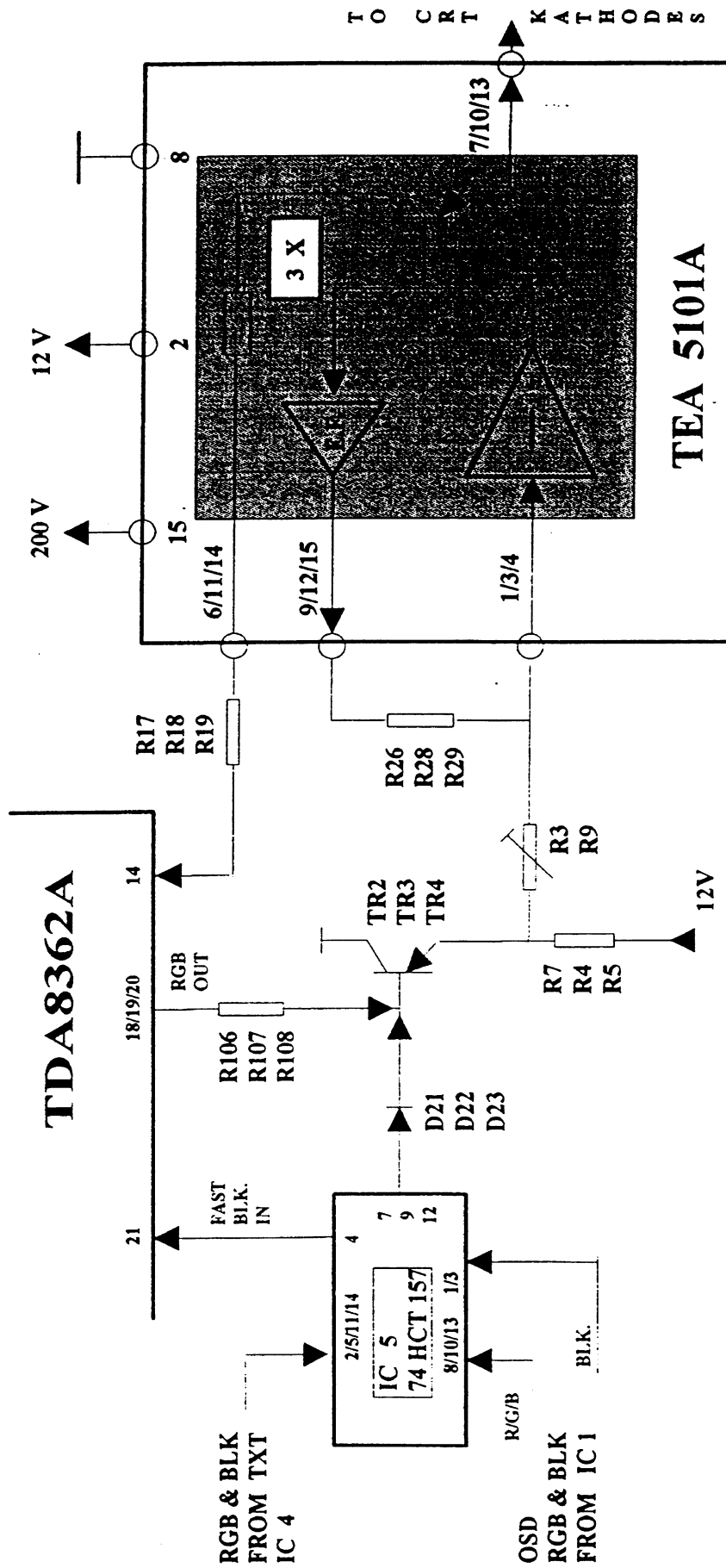
HEADPHONE, MAINS - 16:9



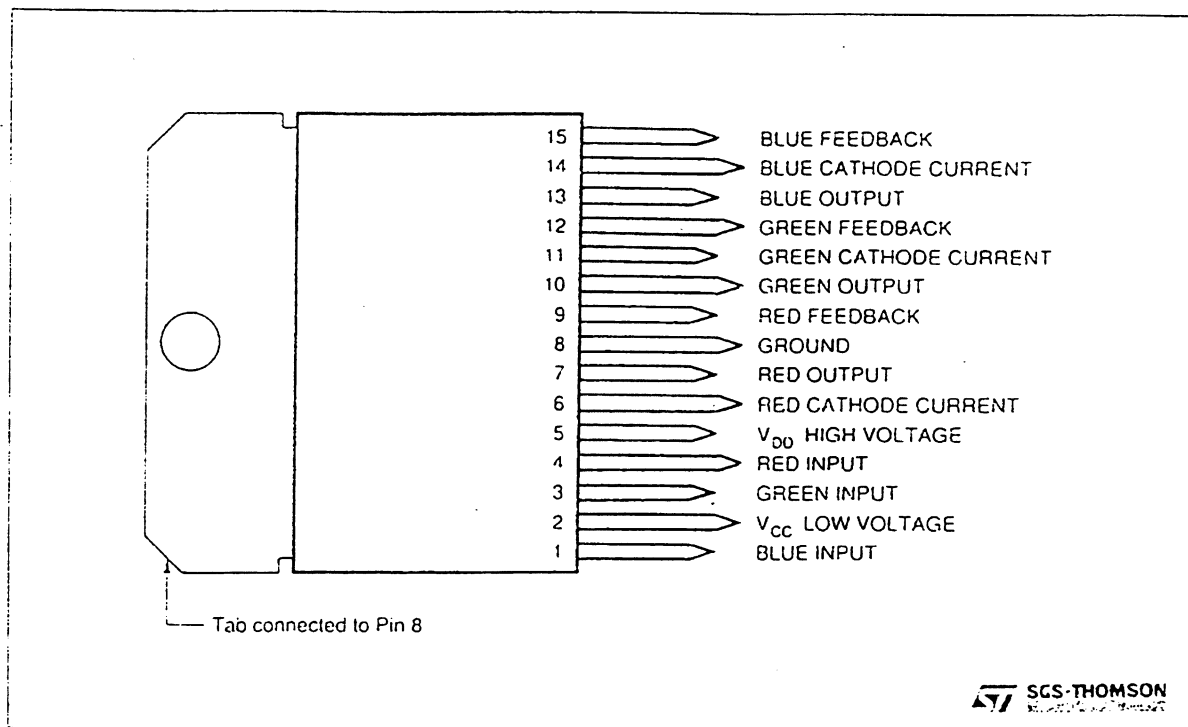
KEYBOARD, I.R. RECEIVED - 16:9



TDA8362A

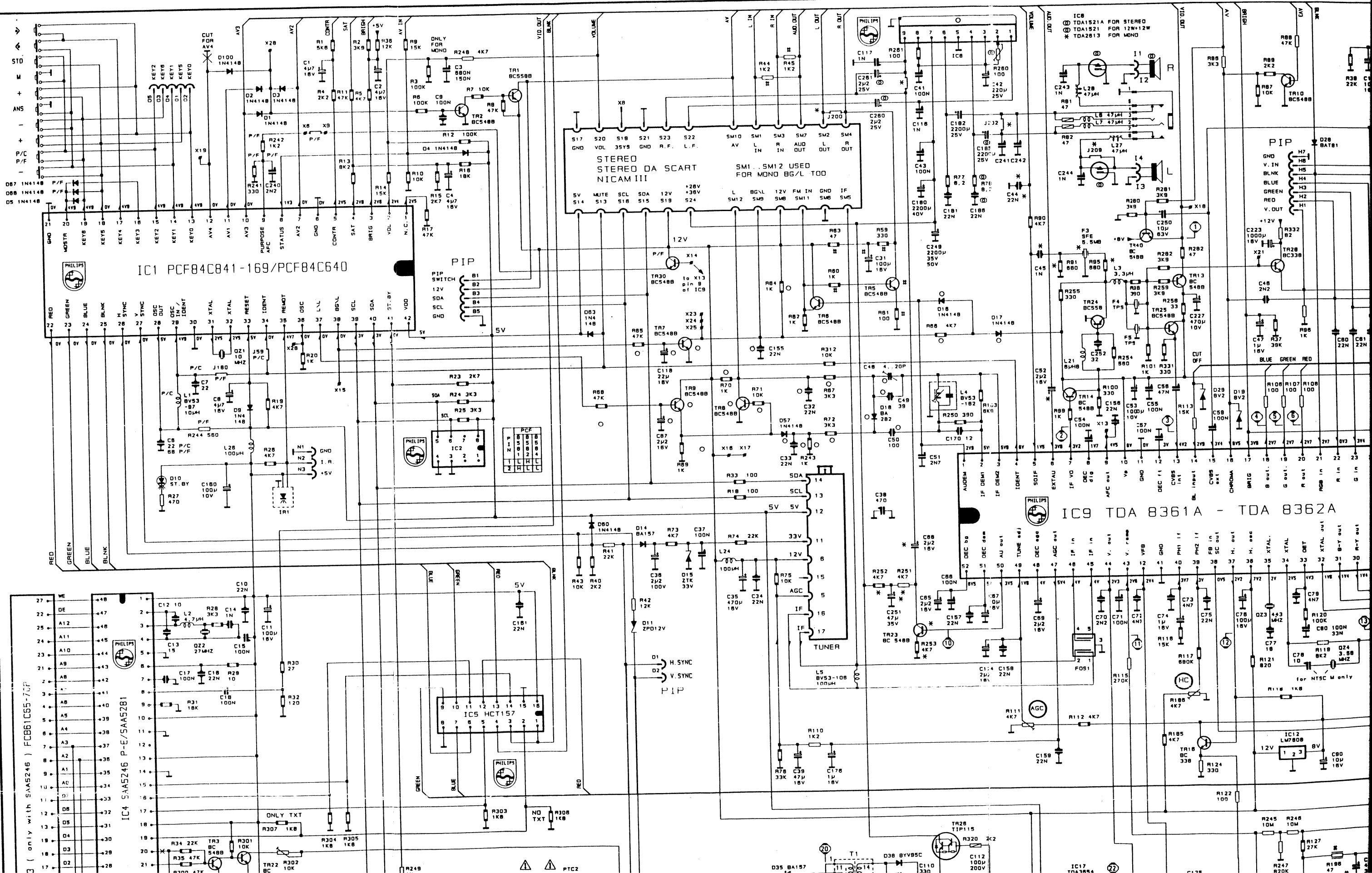


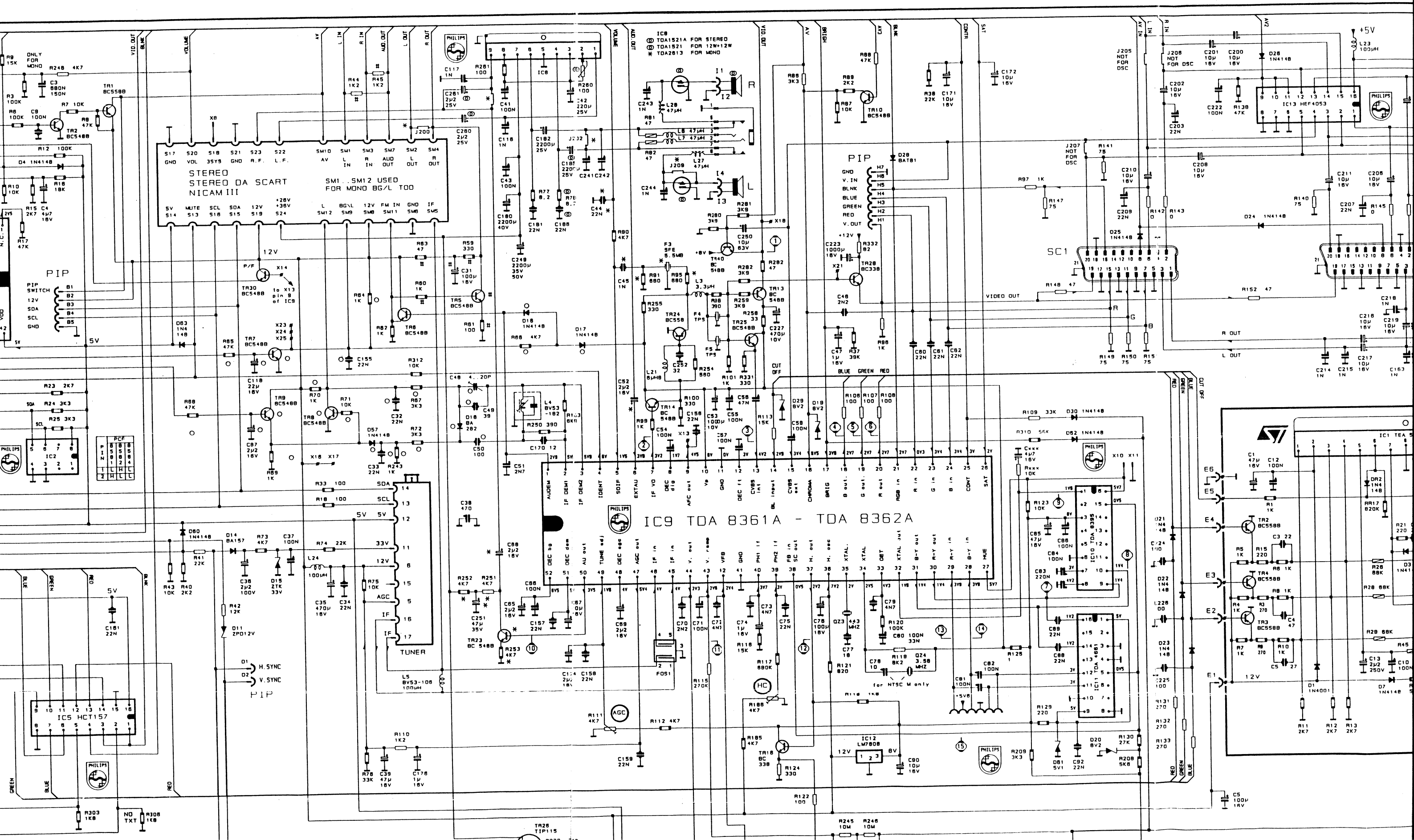
F 11 VIDEO OUTPUT
AMPLIFIER & DRIVE

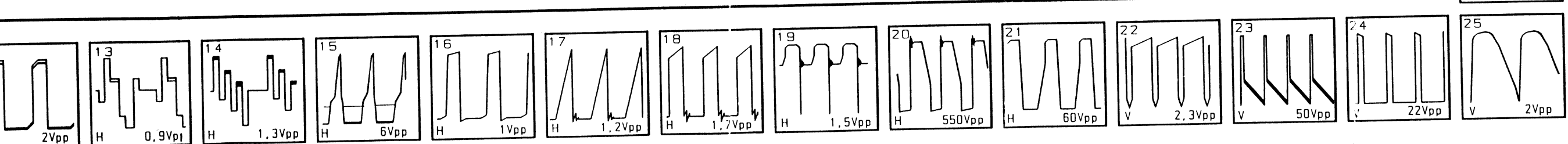
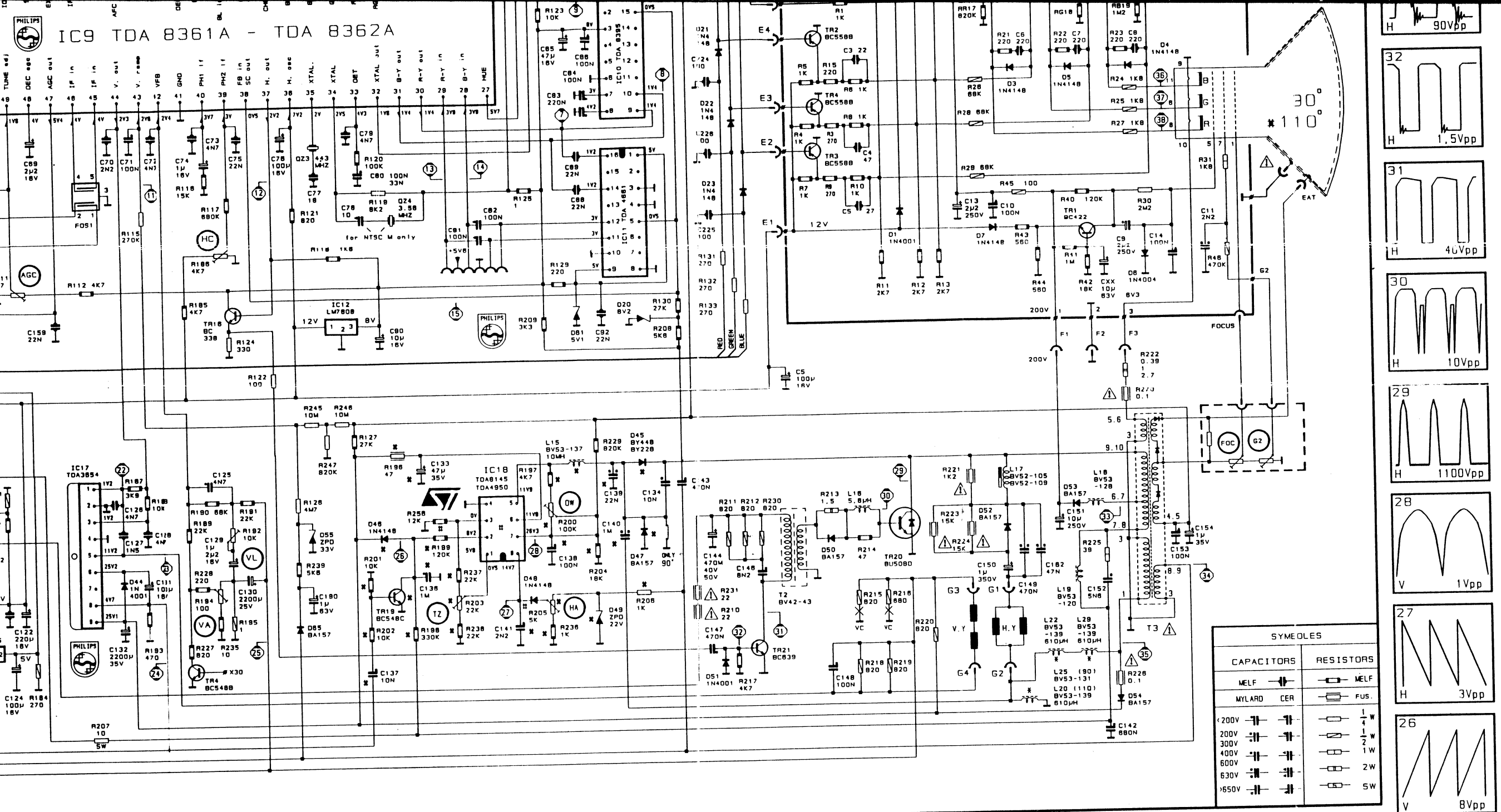


PINNING

- 1- Blue input
- 2- low voltage input
- 3- Green input
- 4- Red input
- 5- high voltage input
- 6- Red cathode current
- 7- Red output
- 8- ground
- 9- Red feedback
- 10- Green output
- 11- Green cathode current
- 12- Green feedback
- 13- Blue output
- 14- Blue cathode current
- 15- Blue feedback







110° ADJUST R203 FOR PROPER TRAPEZIUM
MIT R203 TRAPEZENTZERRUNG EINSTELLEN
REGLER R203 POUR AJUSTER LE TRAPEZE
REGOLARE R203 PER CORREGGERE IL TRAPEZIO

110° ADJUST R200 FOR PROPER PIN-CUSHION
MIT R200 KISSEN EINSTELLEN
REGLER R200 POUR AJUSTER LE COUSSIN
REGOLARE R200 PER CORREGGERE IL CUSCINO

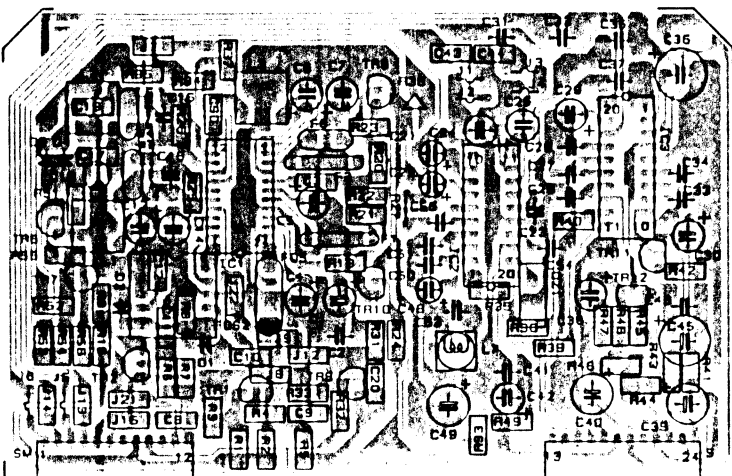
AGC AUTOMATIC GAIN CONTROL
AUTOMATISCHE VERSTÄRKUNGSREGELUNG
CONTROLE AUTOMATIQUE DU GAIN
CONTROLLO AUTOMATICO DEL GUADAGNO

FOCUS
BILOSCARFE
FOCUS
FUOCO

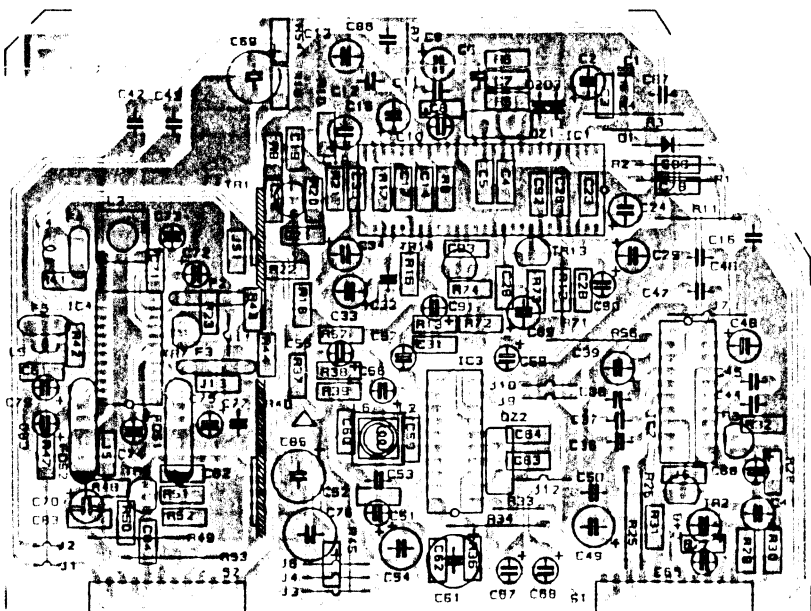
SCREEN GRID
SCHIRMGITTERSPANNUNG
TENSION DU GRILLE-ECRAN
GRIGLIA SCHERMO

CHASSIS F11 R5

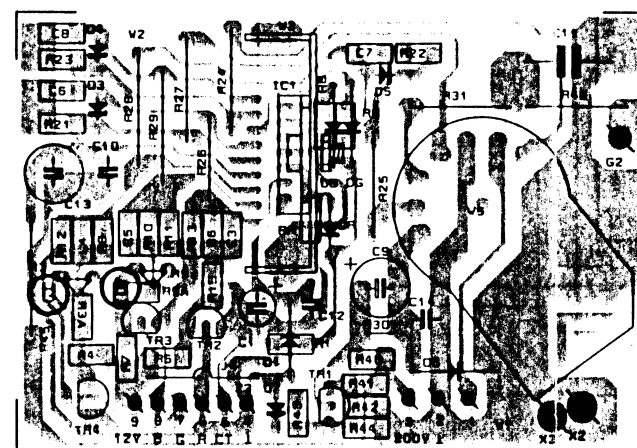
F.S. PCF84C640
F.S. PCF84C841/169



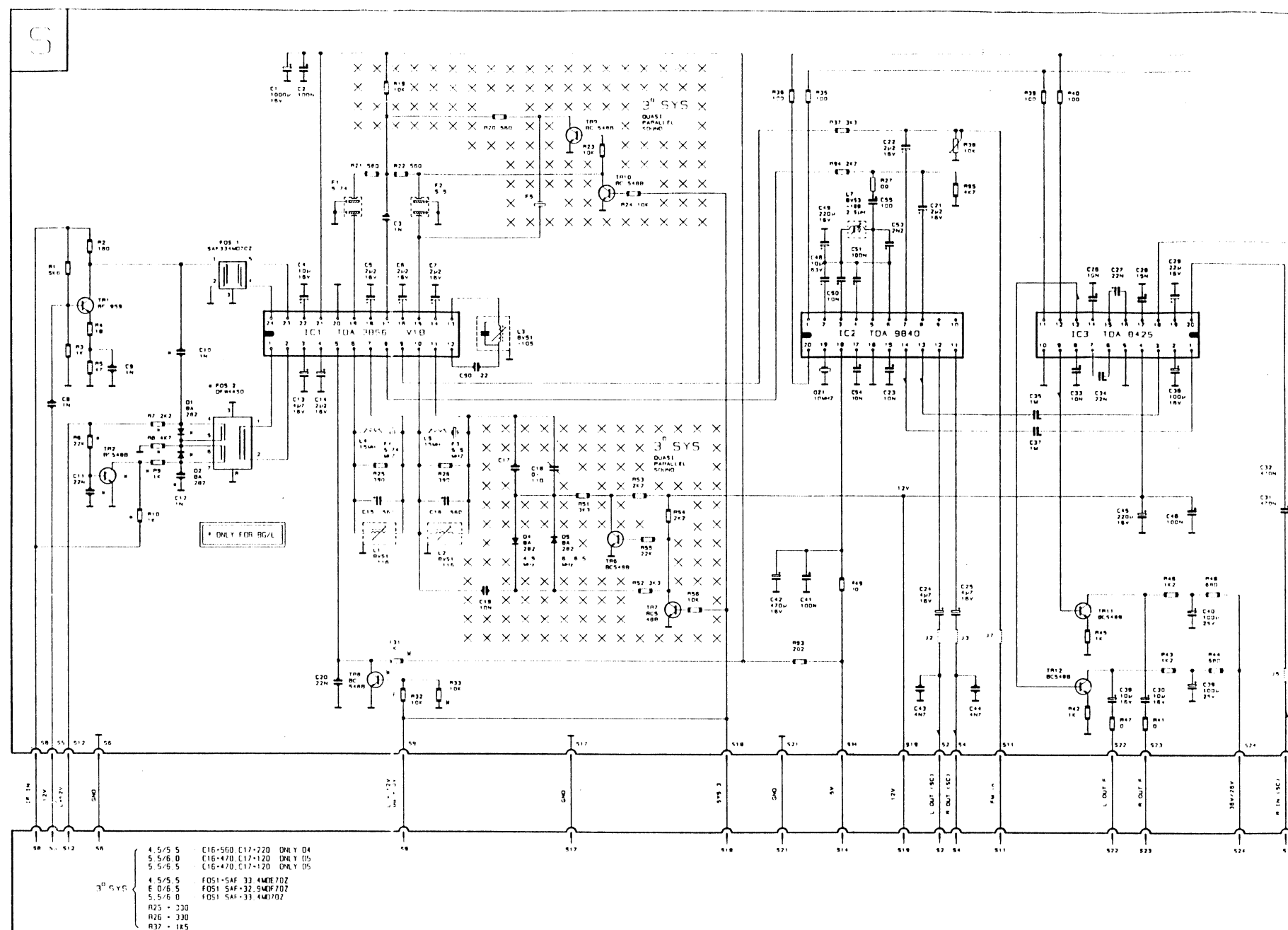
STEREO DECODER
TON STEREO
MODULE SON STEREO
AUDIO STEREO
SONIDO STEREO



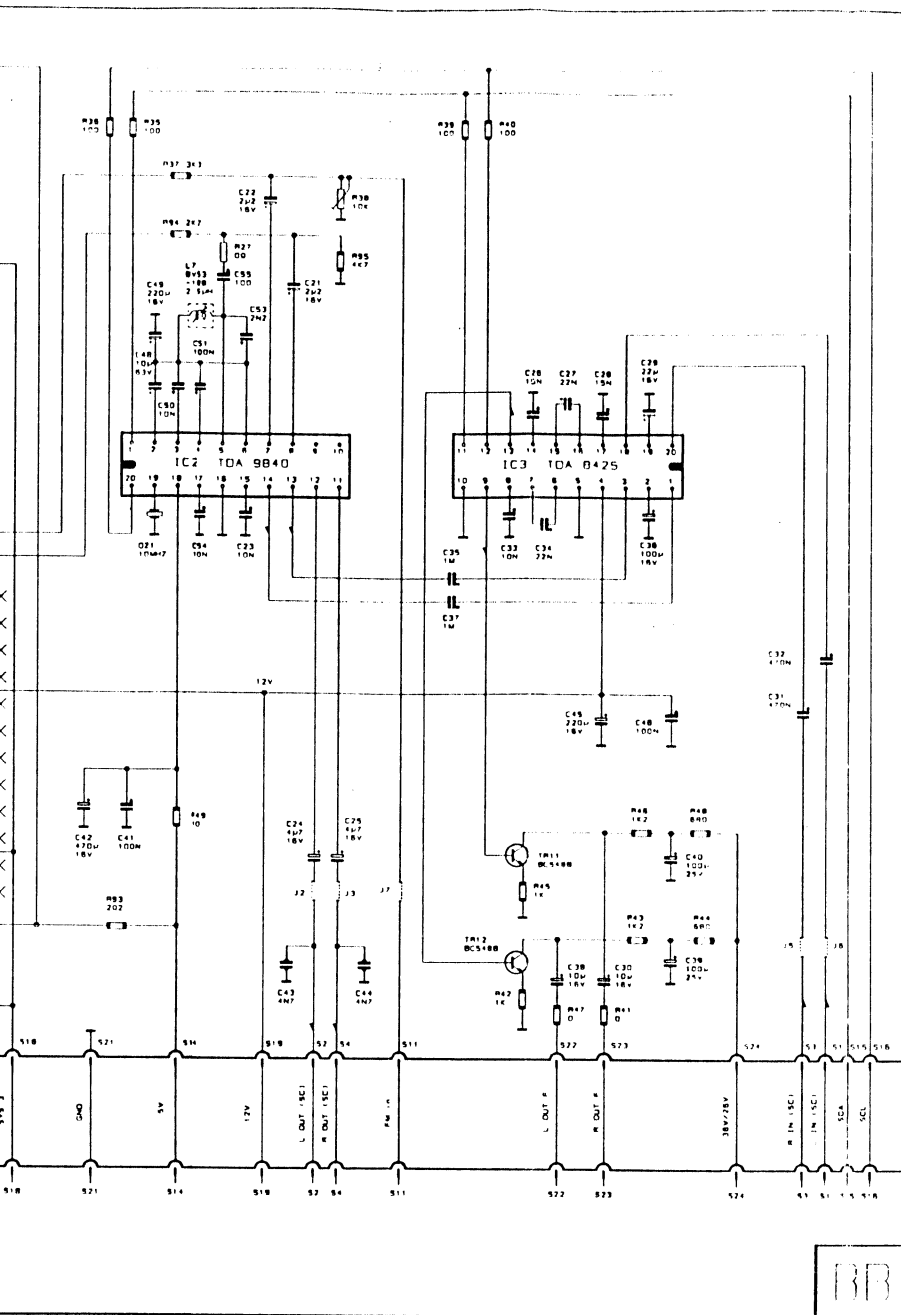
NICAM 3 DECODER
TON STEREO NICAM 3
MODULE SON STEREO NICAM 3
AUDIO STEREO NICAM 3
SONIDO STEREO NICAM 3



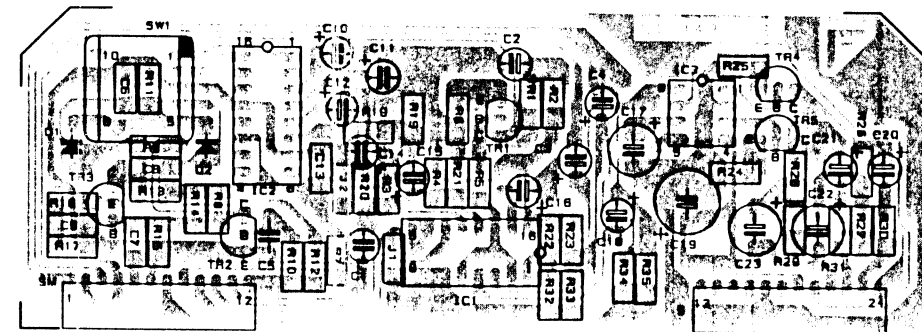
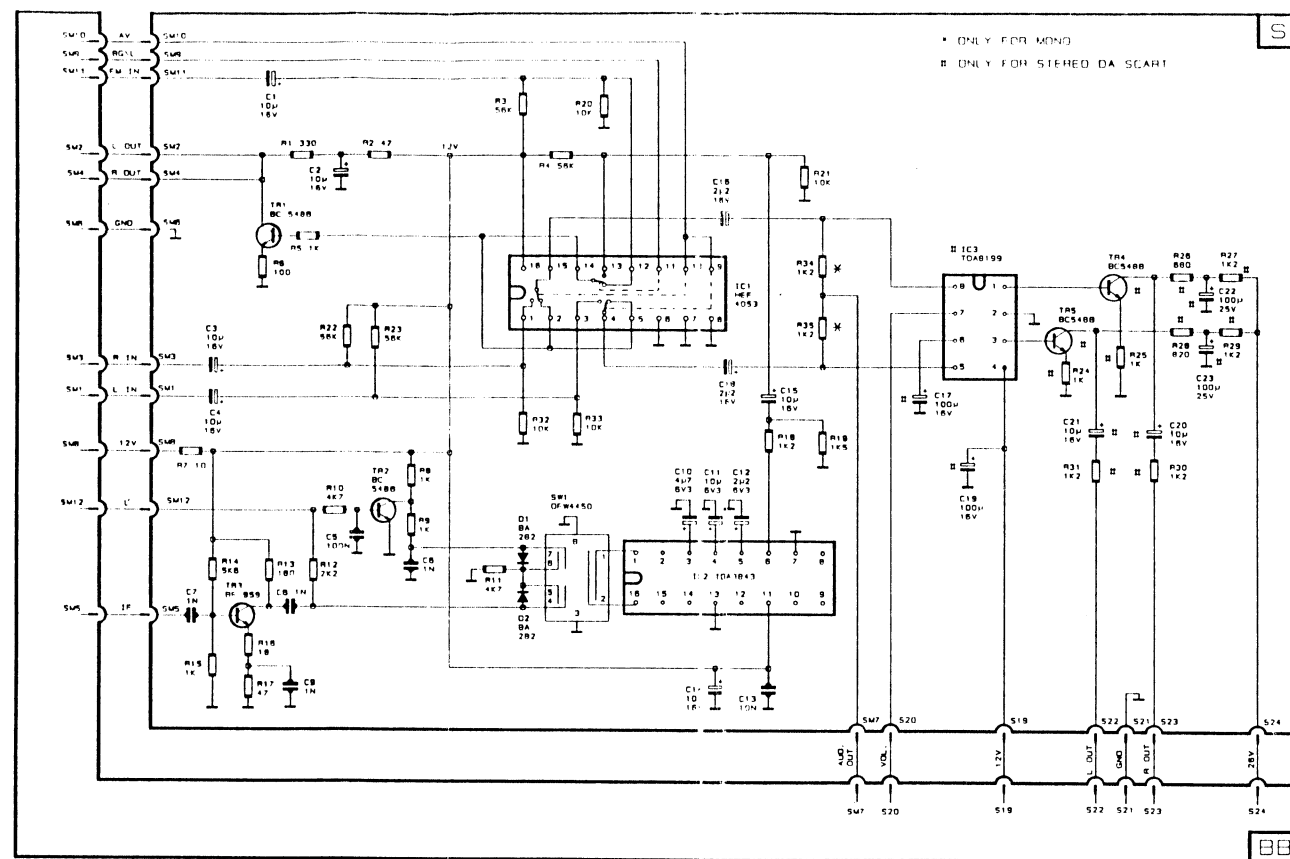
TUBE SOCKET
BILDROEHRENSOCKEL
SUPPORT TRC
ZOCCOLO CINESCOPIO
CIRCUITO IMPRESO ZOCCOLO



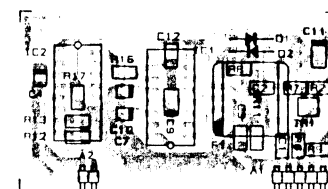
PLAN DR
BESTUECK
PLANS CO
MAPPA LA
ZONA DE



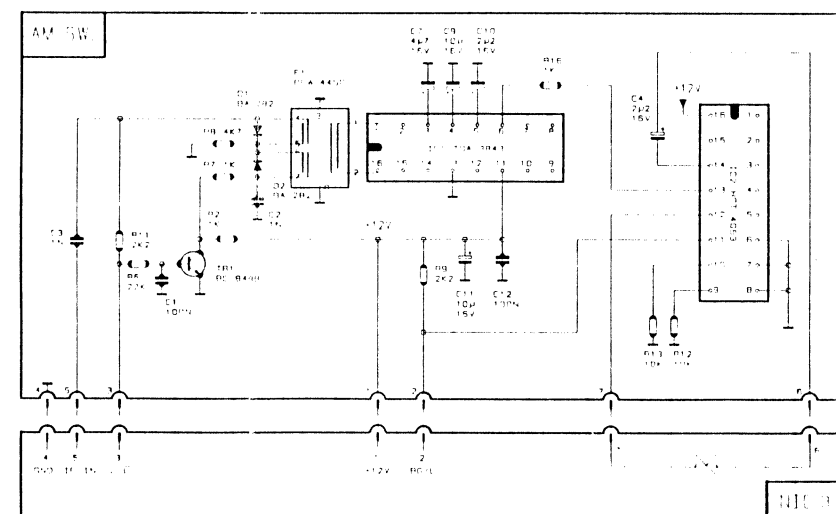
PLAN DRAWING COPPER SIDE
BESTUECKUNGSPLAN KUPFERSEITE
PLANS COTE CUIVRE
MAPPA LATO RAME
ZONA DE PISTAS (COBRE)



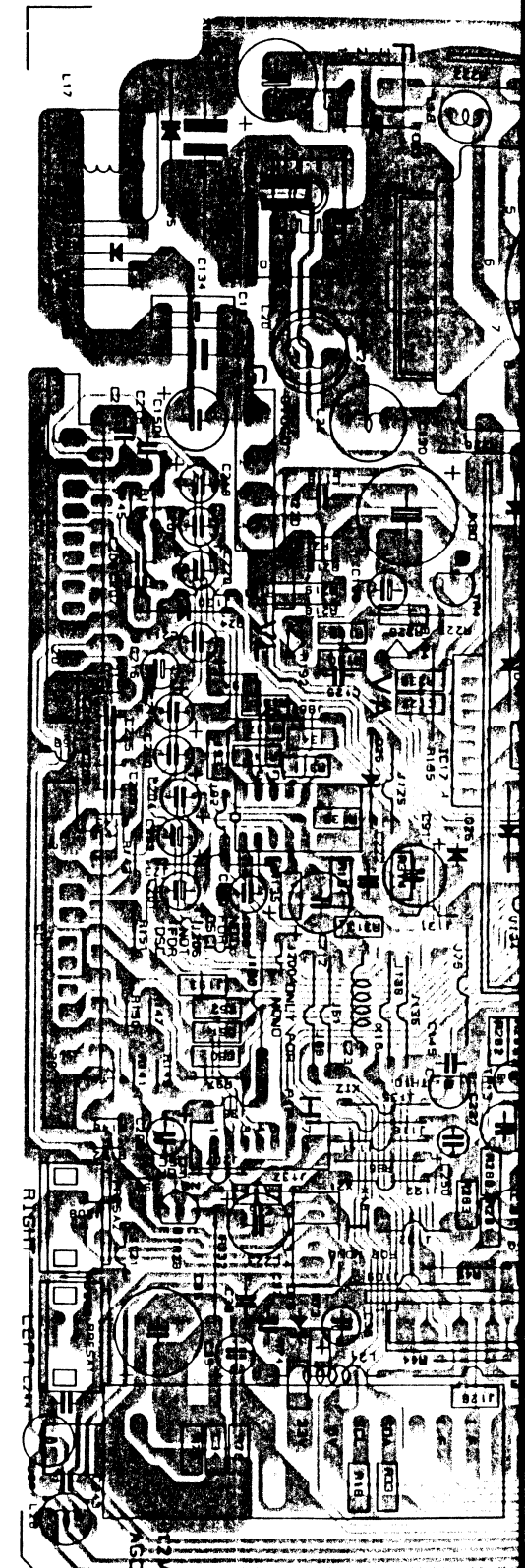
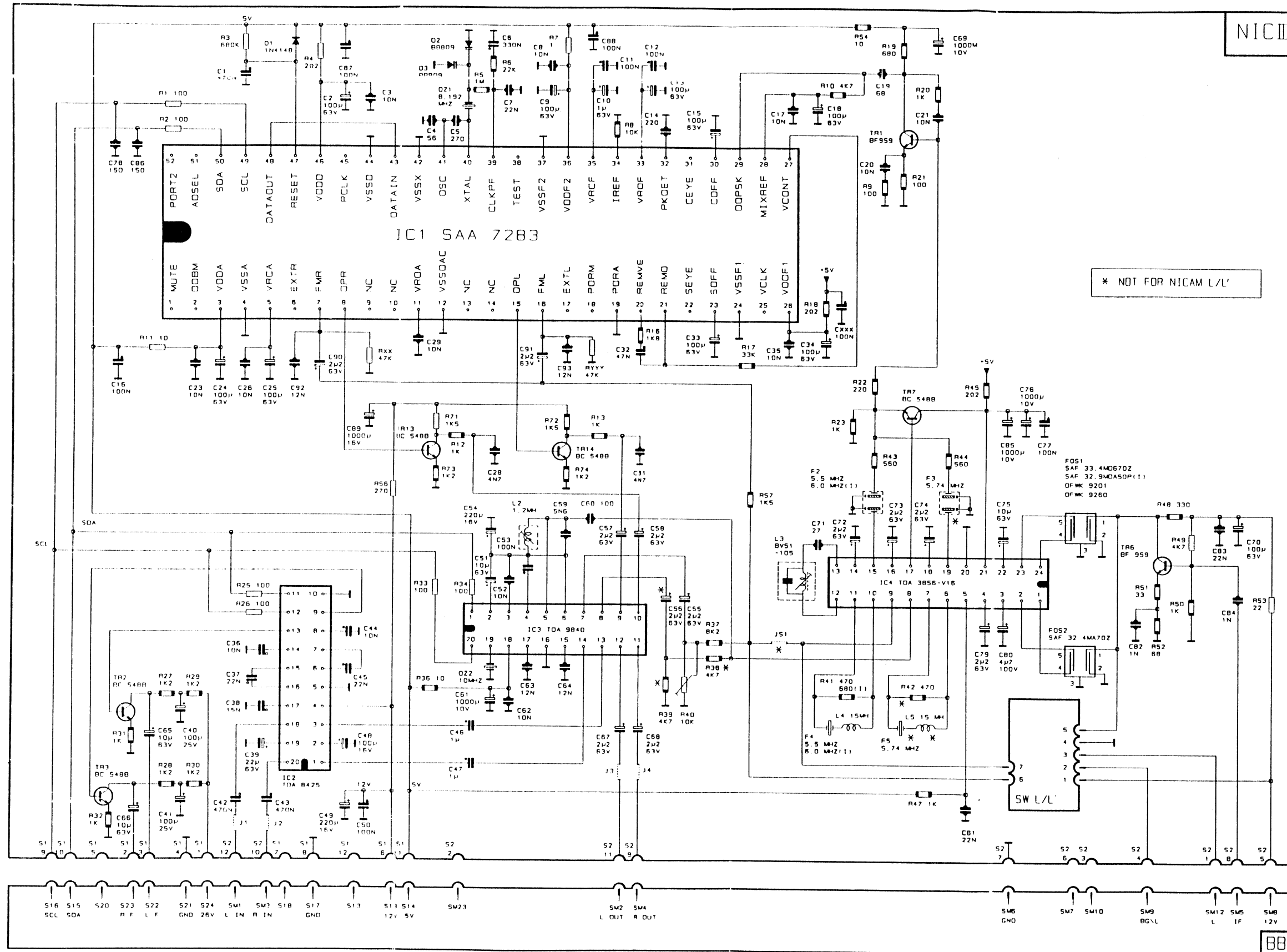
AUDIO/L+STEREO FROM SCART CONNECTOR
AUDIO/L+STEREO ÜBER SCART
SON/L+STEREO PAR LA PRISE PERITELEVISION
AUDIO/L+STEREO DA SCART
AUDIO/L+ESTEREO POR MEDIO DEL EUROCONECTOR SCART



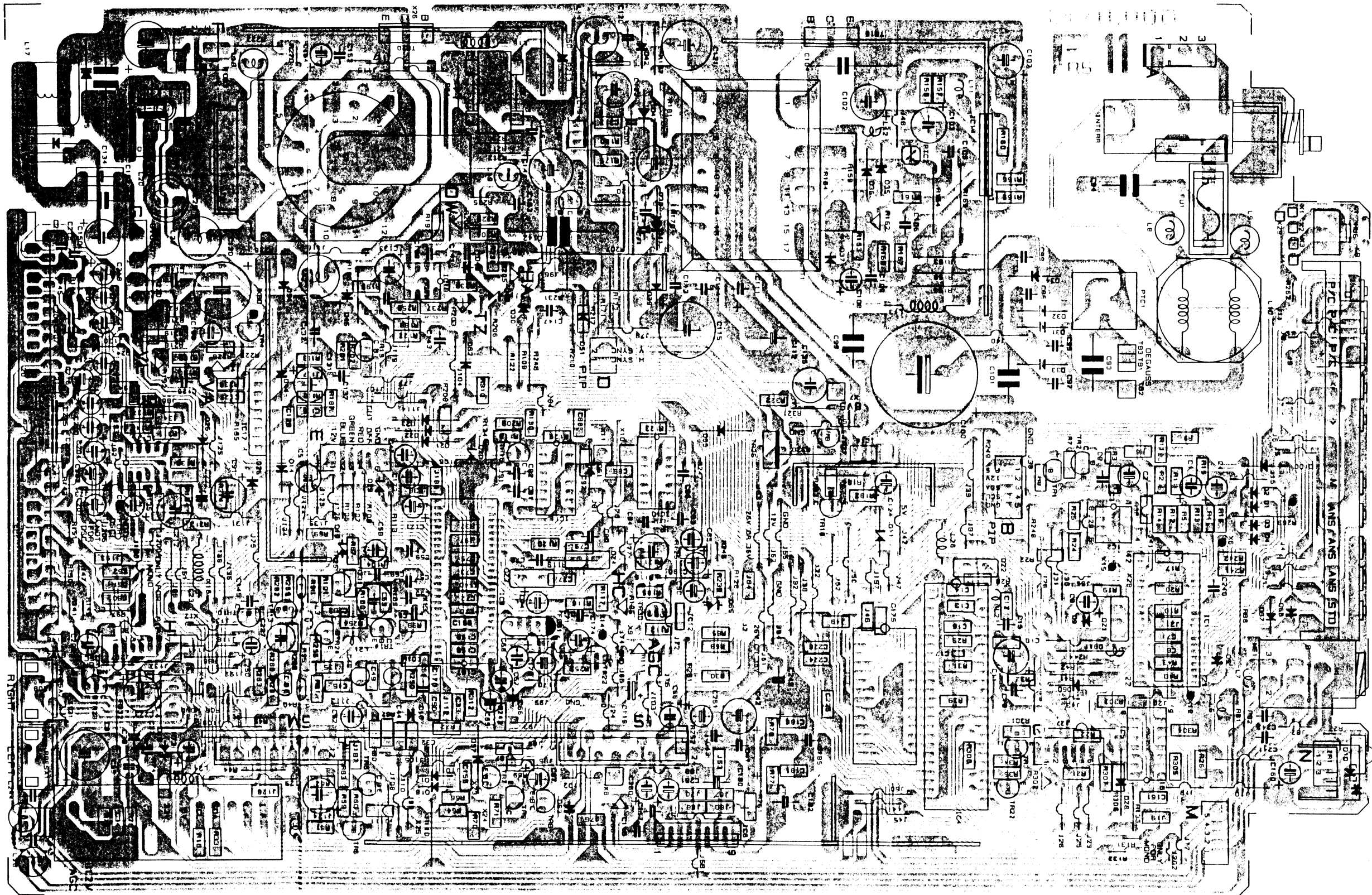
NICAM L AUDIO MODULE
MODUL FÜR NICAM L
MODULE SON POUR NICAM L
MODULO AUDIO PER NICAM L
MODULO AUDIO POR NICAM L



BOARD BASE
GRUNDCHASSIS
PLATINE MERE
TELAIO BASE
CIRCUITO IMPRESO CHASSIS



IC III



C70
100μ
63V

R53
22S2
E

5 9

7